Iowa State College Library, Ames, Iowa
NOV 25 1925
Forestry
SD
1
.V58

NOVEMBER
1925

VETERINARY MEDICINE

4753 SOUTH PARKWAY, CHICAGO

IN THIS ISSUE

ENDOCRINE THERAPY
By HAMILTON KIRK

THE TUBERCULIN TEST IN A PASTEURIZED MILK SUPPLY
By J. H. SHRADER

FATAL DISEASE IN CATTLE
By A. T. KINSLEY

THE PRESENT STATUS OF THE HORSE IN MONTANA
By N. B. SMITH

TICK PARALYSIS IN SHEEP
By A. F. BALDWIN

COLD WEATHER DISEASES OF POULTRY
By B. F. KAUPP

LOSS OF SWINE AFTER VACCINATION
By A. T. KINSLEY

CALF PNEUMONIA
By T. B. HARRIES

TETANUS IN A MARE
By E. S. BROWN

REMOVING A WART WITH FORMALDEHYD
By M. W. EMMEL

ARTERIOSCLEROSIS IN A DOG
By G. R. STEWART

—and 50 Other Articles

$4.00 the year

VOL. XX No. 11

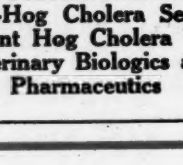
THIS TYPE OF ADVERTISING WILL PAY ANY VETERINARIAN

Your best advertising costs nothing. To have your name mentioned and supplemented with the statement "he knows his business" is something worth striving for. For reputation pays and pays big. Fort Dodge Products will do their part in broadcasting your reputation and in building a worthwhile practice. Always above minimum requirements, they bring success—establish prestige for the Doctor who uses them.

FORT DODGE

Whole Blood Anti-Hog Cholera Serum
Clear Heated Anti-Hog Cholera Serum
Clear Concentrated Heated Anti-Hog Cholera Serum
Virulent Hog Cholera Virus
Veterinary Biologics and Pharmaceutics

FORT DODGE SERUM CO., Fort Dodge, Ia.



U. S. Veterinary License No. 112

Veterinary Medicine

VOL. XX NOVEMBER, 1925 No. 11

PRIZE WINNERS FOR NOVEMBER

1st Prize, M. W. Emmel, Wilson, Ark.
2nd Prize, T. B. Harries, Strathmore, Alberta
3rd Prize, G. R. Stewart, Spokane, Wash.
4th Prize, E. S. Brown, New Dundee, Ontario

The manuscripts received for the November contest were well in keeping with the contributions entered during preceding months and indicate that the interest in this feature of Veterinary Medicine continues unabated. The judge made the following awards:

First prize: Fifteen dollars to Dr. M. W. Emmel, Wilson, Ark., for his report on removing a wart with formaldehyd.

Second prize: Eight dollars to Dr. T. B. Harries, Strathmore, Alberta, for his report on calf pneumonia.

Third prize: A yearly subscription to Veterinary Medicine to Dr. G. R. Stewart, Spokane, Wash., for his report on arteriosclerosis in a dog.

Fourth prize: Two dollars to Dr. E. S. Brown, New Dundee, Ontario, for his report on a case of tetanus in a mare.

In addition the following reports were cited as being worthy of special mention in the order named:

Periproctal Abscess in a Horse, by Dr. E. J. Jelden, White Water, Kan.

Atony of the Rumen, by Dr. P. K. Walters, Thorndale, Ont.

Ethyl Chlorid Anesthesia Fatal to Dog, by Dr. Wm. M. Nielsen, Newcastle, Australia.

Intracranial Hemorrhage in a Dog Caused by Artificial Vomiting, by Dr. J. Serling, Bronx, New York.

Mold Poisoning in Hogs, by Dr. J. R. Hockenbury, Chicago, Ill.

Surgical Removal of Urinary Calculus in a Horse, by Dr. L. H. Allen, Albany, Wis.

In submitting his decisions, the judge commented on the manuscripts as follows:

"In reading over this large number of case reports, one cannot but be impressed with their high quality and value to other practitioners. It is a significant commentary on the policy and standing of Veterinary Medicine that it attracts to its pages so much of a helpful nature on so great a variety of subjects from men who are the leaders of the profession in their localities.

"Busy practitioners such as these would not take the necessary time and expend the effort required to prepare these reports to help others if they had not in turn been helped by the publication.

"As judges of previous contests have remarked, it has been no easy task to award the prizes, and while the reports have appeared to me as being of value in the order named, I can readily agree that a different arbiter might with just as good show of reason have made awards differing possibly in every case."

NOW SEND IN YOUR REPORTS FOR DECEMBER

The contest covering case reports and discussions inaugurated by Veterinary Medicine last January, ends with the December issue. The response has been very gratifying indeed, and a wealth of interesting material has been made available to readers.

Since the first of the year, more reports of cases have appeared in these pages under the stimulus of this contest than have ever before been published in periodical veterinary literature during a similar period. Contributors are to be congratulated on this splendid showing and on the quality of the matter submitted. The reports have covered a wide variety of subjects and have been received from practically every state in the Union, Hawaii, Philippine Islands, five Canadian provinces, British West Indies, Australia, England and Wales.

Veterinarians who have not yet submitted reports are urged to get in on the wind-up for the year, while those who have sent in articles are invited to keep up their good work and help to set as high a record as possible before November 10th, which is the closing date for the December contest.

The offer is renewed again this month of any one of the following books to each veterinarian

who submits an article. Please indicate your choice when sending in your manuscript.

Hall's "Diagnosis and Treatment of Internal Parasites."

Albrechtsen's "Sterility of the Cow."

Veterinary Prescriptions.

In addition, of course, each contestant will have a chance to win one of the regular prizes as follows:

First prize of $15.00 for the most valuable discussion.

Second prize of $8.00 for the second most valuable discussion.

Third prize, a yearly subscription to Veterinary Medicine.

Fourth prize, $2.00.

A complete account of the results of the contest covering the whole year will appear in the December issue.

THE NEW PHARMACOPEIA

The United States Pharmacopeial Convention met in Washington in May, 1920, and appointed a committee to revise the Pharmacopeia of the United States. The committee has now completed its work and the new Pharmacopeia was placed on sale, August 15. Since the new book does not become official until Jan. 1, 1926, an interval of four and one-half months is allowed for physicians to become familiar with the changes and for pharmacists to dispose of their stocks made according to the present book, the U. S. Pharmacopeia IX. The responsibility for the scope of the U. S. P. X was placed on the twenty-one physicians on the committee; i. e., on those having the degree of doctor of medicine. Consequently, the new book should more nearly represent rational medicine than some of the preceding revisions in which pharmacists and pharmaceutic manufacturers largely controlled the situation. From the standpoint of the clinician, the most noteworthy feature of this revision is the small number of admissions as compared with the large number of deletions. Only forty new drugs and preparations are added, while 192 have been deleted. This change, important though it is numerically, is of even greater significance than the numbers alone connote, for the new drugs, with a few exceptions, are substances that give promise of being useful additions to our materia medica, while the deleted drugs are either little used or comparatively worthless, or are therapeutically better represented by others in the book. Of the added drugs and preparations, thirty-one are already described in New and Nonofficial Remedies. Many of the tests and assays for these were previously worked out in the American Medical Association Chemical Laboratory and now appear in the official publication of the Council on Pharmacy and Chemistry. The most important additions are acetylsalicylic acid, benzocain, ethyl chaulmoograte, amidopyrin, the silver proteinates, arsphenamin, neo-arsphenamin, barbital and its sodium compound, barium sulphate, carbon tetrachlorid, dichloramin, epinephrin, phenobarbital, procain hydrochlorid, quinidin sulphate, quinin ethylcarbonate, sodium biphosphate and surgical solution of chlorinated soda. Of the nine additions not in New and Nonofficial Remedies, two titles, ipomea (Mexican scammony) and its resin, represent a substitution of the Mexican drug and its resin for the Turkish drug and its resin, which were described in the U. S. P. IX and which are not now readily obtainable. Among the additions, that of Rhus glabra and its fluidextract will add little to the prestige of the book. The addition of whisky and brandy may be criticized by many, but extensive prescribing perhaps warrants the inclusion. The elimination of eleven extracts and of twenty-seven fluidextracts is in keeping with modern prescription practice. The omission of such substances as arnica, calcium hypophosphite, cerium oxalate, coriander, grindelia, hops, lactucarium, three lithium salts (bromid, carbonate and citrate), matricaria, prickly ash, musk, parsley, pepper, saw palmetto, stillingia, sumbul and taraxacum is a distinct aid to scientific medicine. The alkaloids morphin and strychnin have been deleted, but these are better represented by their soluble salts. The retention of sarsaparilla will be regretted by progressive clinicians.

Physicians and pharmacists will welcome the effort that has been made to simplify the names. For comparison, a few examples of Latin titles are given in parallel columns:

U. S. P. IX	U. S. P. X
Acidum Phenylcinchoninicum	Cinchophenum
Balsamum Tolutanum	Tolu
Hexamethylenamina	Methenamina
Hypophysis Sicca	Pituitarium
Liquor Hypophysis	Liquor Pituitarii
Saccharum	Sucrosum
Saccharum Lactis	Lactosum
Serum Antidiphthericum Purificatum	Antitoxinum Diphthericum
Thyroideum Siccum	Thyroideum

As was noted in a previous editorial in The Journal, the biologic assays have been greatly amplified so that instead of two drugs and their preparations for which bio-assays were required

in the U. S. P. IX, there are now eight which must be standardized by these methods. These are aconitie and its tincture, cannabis and its fluidextract, digitalis and its tincture, solution of epinephrin hydrochlorid, ergot and its fluidextract, solution of pituitary, squill, its fluidextract and tincture, and strophanthus and its tincture. Because of the difficulty in preparing standard samples of these drugs which will be of uniform strength, the Bureau of Chemistry of the United States Department of Agriculture is prepared to furnish samples of standardized preparations to manufacturers for adjusting the activity of new lots. It is believed that the obligatory bio-assays will result in greater uniformity and dependability of the market supplies of these hitherto unsatisfactory drugs.

The changes in the strengths of three mercurials should be especially noted by prescribers. Formerly the 50 per cent ointment of mercury, employed as a means of systemic administration of this drug by inunction, was known as Unguentum Hydrargyri, and a 33 per cent ointment, intended to be used as a local remedy in parasitic conditions of the skin, was known as Unguentum Hydrargyri Dilutum. The name of the latter has been changed to Unguentum Hydrargyri, while the form intended for absorption is called Unguentum Hydrargyri Fortius. The new ointment of mercury, therefore, is made with a base not intended for easy absorption through the skin, but for its immediate local action, and when the physician desires the constitutional action of mercury, he should prescribe Ung. Hydrarg. Fort. The ointment of yellow mercuric oxid (Unguentum Hydrargyri Oxidi Flavi) has been reduced from 10 per cent to 1 per cent, in conformity with the customary practice of today.

The unit of measure is the cubic centimeter (abbreviation cc.), which replaced the milliliter (mil) of the U. S. P. IX. The change from cc. to mil in the previous revision never became popular in this country. Prescribers and dispensers will doubtless be glad to see the old familiar cc. again. The official abbreviation for gram remains "Gm.," but cubic centimeter is abbreviated to "cc."

While the new book has erred in the retention of some drugs of doubtful worth, it represents the trend of therapeutic thought much more completely than any of its predecessors or any of the foreign pharmacopeias now official.—Journal American Medical Association.

DR. MAURICE C. HALL BECOMES CHIEF OF THE ZOOLOGICAL DIVISION, U. S. B. A. I.

Effective October 1st, Dr. Maurice C. Hall was appointed Senior Zoologist in the Bureau of Animal Industry, U. S. Department of Agriculture, this title carrying with it the position of Chief of the Zoological Division. He succeeds Dr. B. H. Ransom, who died September 17th.

Before the recent reclassification act, Dr. Ransom's title was Zoologist and Dr. Hall's was Senior Zoologist. Under the new act, the titles were reversed. Most of Dr. Hall's older papers for the past six years show the title Senior Zoologist, and only three of the later ones carry the title of Zoologist. The reversing of the titles by the reclassification will explain the apparent discrepancy in connection with the new appointment.

Dr. Hall was born at Golden, Colo., July 15, 1881. He received the degree of B. S. from Colorado College in 1905; M. A., University of Nebraska, 1906; Ph. D., George Washington University, 1915, and D. V. M. from the same institution in 1916. He was instructor in botany and physiology at the Cutler Academy, Colorado Springs in 1905-5; instructor in biology and chemistry at the Canyon City (Colo.) High School in 1906-07. He became junior zoologist in the U. S. Bureau of Animal Industry in 1907, and assistant zoologist from 1911 to 1916; also assistant zoologist, U. S. Insecticide and Fungicide Board, 1915-16. He was professor of zoology and parasitology in the College of Veterinary Medicine, George Washington University from 1914 to 1916; special lecturer in parasitology at the Detroit College of Medicine and Surgery, 1917-18; parasitologist in the research laboratory of Parke, Davis & Co., Detroit, 1916-18.

During the world war he served as second lieutenant and later first lieutenant in the Veterinary Corps, U. S. Army, 1918-19. In 1919 he became Senior Zoologist in the U. S. Bureau of Animal Industry.

Dr. Hall is a fellow of the A. A. A. S., member of the Entomological Society, Washington, and the Helminthological Society, of which he was secretary, 1910-16 and 1919-22, and president, 1922-23; also member of the Washington Academy of Science, American Society of Zoologists, American Veterinary Medical Association, American Society of Tropical Medicine, Phi Beta Kappa, Sigma Xi, foreign member of the Royal Academy of Agriculture, Turin, Italy.

He was a delegate to the 2nd Pan-American Scientific Congress, Washington, D. C., 1915-16.

He is well known to readers of Veterinary Medicine and the Journal of the A. V. M. A. for his numerous contributions on the subject of parasitology. He has also contributed extensively to the programs of veterinary association meetings. He is the author of numerous papers dealing with parasites from the zoological, medical and economic standpoints, also two books for veterinarians, "Diagnosis and Treatment of Internal Parasites," and "Parasites of Swine." He received world-wide recognition in medical circles for his introduction of carbon tetrachlorid in the treatment of hookworm disease. His achievements are a source of pride to the veterinary profession.

"Veterinarians and Veterinary Science" is the title of a front page article in the "Iowa Homestead" of September 24th. Its tenor may be judged by the opening sentence, which reads: "There never has been greater need for well educated veterinarians in rural sections than there is today, yet the number of trained men in the profession of veterinary science is growing less."

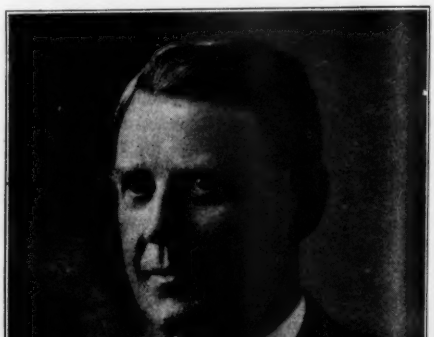
The article refers in complimentary terms to the veterinary profession in Iowa and particularly to the work of the veterinary department of the Iowa State College at Ames, and throughout evinces an attitude toward the veterinary profession unhappily too rare on the part of the farm press five years ago.

Mr. C. H. Williams, President of the Corn States Serum Co., 1025 Mason St., Omaha, Nebraska, will supply copies of this article to veterinarians requesting it.

According to Dr. J. R. Mohler, Chief, U. S. B. A. I., foot-and-mouth disease had been found in 46 herds in Texas up to October 3rd. Since the beginning of the outbreak and up to the close of October 2nd, 19,023 cattle, 1,448 sheep, 554 swine and 272 goats had been destroyed. The disease has been found in only two counties, Harris and Galveston. Infection was found on October 2nd in one herd three miles west of Webster in Harris County. Only one animal showed symptoms of the disease, but the outbreak involved approximately 600 animals, which were slaughtered and buried. With this exception, the last known diseased herd was placed under ground on October 1st.

Immunity produced by the use of abortion bacterin or living culture vaccine is of relatively short duration. It is possible that a higher degree of resistance may be established by resorting to intravenous injection of the antigen (bacterin or vaccine). Some investigators are of the opinion and have apparently demonstrated that one large injection of bacterin produces a greater resistance than a series of smaller doses.

The breeding habits of the Pacific salmon has been a fertile subject for discussion for many years. Three stages of the life cycle of these salmon are: early life of the young in fresh water, the period of growth in salt water, and the wandering of the adult to the spawning usually terminates in death. There are probably several factors that enter into the selection by salmon of the stream of water in which they will spawn, the most important factor is apparently the temperature of the water. They invariably select the stream or lake with the coldest water.



Dr. S. J. Murray, LeSueur, Minn., winner of first prize in September for his discussion of open joint and open bursa. Aside from his veterinary activities, Dr. Murray was appointed judge of the municipal court in the county of Le Sueur in 1923 by Governor Preus and was elected to succeed himself at the spring election following.

Endocrine Therapy

Hamilton Kirk, M. R. C. V. S., London, Eng.

In spite of the marked scepticism of quite a large number of medical and veterinary practitioners towards the value of organotherapy, no one can deny the specific properties and importance of such agents as adrenalin, pituitrin, insulin, and thyroid extract; and if progress with the other glandular products has, up to now, been disappointing, it is only reasonable to suppose that in the light of further investigation and in the fullness of time, improved methods will be discovered for their preparation and application to the human or animal body, which will permit of their more thorough assimilation, and consequently, of their increased potency and more defined activity. Probably one of the greatest factors against the successful use of organic extracts in the hands of the clinician, is the mode of their administration.

As Swale, Vincent, and others have so often reiterated, the majority of these hormones lose their value when given orally. Thyroid extract is a well known exception. On many occasions I have employed parathyroid for the treatment of dogs, but without any success whatever. The two conditions I have tried it for were chorea and obstinate auricular ulceration. It is credited with having an inhibitory effect upon the involuntary muscular spasms noted in chorea of dogs; but given to these patients per os, for more than a week, I was able to notice in each case, an entire absence of the slightest improvement. Recently, a doctor who had been treating his terrier (which had suffered with ulcerated ear flaps for twelve months) asked me to do what I could with it. Parathyroid and calcium were prescribed, but again failed, and eventually, after all kinds of other treatments had been tried, surgical methods were adopted. Assuming for the moment that the parathyroid has a salutary effect upon these affections, I have satisfied myself that the way in which it was introduced was probably at fault, and I am now in the midst of a series of trials of it—given subcutaneously—for chorea. I am thus not yet in a position to publish the results of these investigations.

In canine practice, a condition upon which a veterinary surgeon is constantly asked to advise, is that of "delayed estrum." The rearing of pedigree dogs in this country is a vast commerce, and many of these animals are sold for comparatively fabulous sums. Thus, breeding problems are regarded as of first rate importance, amenorrhoea and sterility being outstanding in the list. In view of the fact that the hormone (oöphorin) obtained from the interstitial cells of the ovary, is directly concerned with the development of the female sexual characteristics and the function of menstruation, I some time ago commenced treating irregular bitches with capsules containing thyroid extract, whole pituitary, and interstitial ovarian substance. The doses given varied with the size of the dog, and administration commenced usually about a fortnight before the date of expected estrum. In quite a number of cases, clients have reported to me that bitches which had previously missed one or two menstrual periods had become regular after the organic treatment. Some even told me they had tried the capsules on male dogs which previously had been regarded as sterile, and with gratifying results. I cannot, however, do other than regard these results with some reserve because I quite realize that estrum might possibly have occurred in any case; in fact, I am inclined to think that in most of the cases, if any benefit resulted, the thyroid extract was the responsible agent.

It is a well known fact that over-fat bitches frequently prove refractory breeders. I intend giving these three extracts subcutaneously in future, for the treatment of amenorrhoea, as I believe that better results might thereby be obtained.

A case was sometime ago reported by a Hampshire veterinary surgeon, in which he was asked to treat a valuable Pomeranian bitch which had missed her last two periods of estrum, and was several weeks overdue for her present one. Having tried extract of corpus luteum with no success, he then administered orchic substance. After four days the desired result was obtained and the bitch subsequently produced a good litter of puppies. But in trying the corpus luteum for amenorrhoea, this gentleman was probably ill-advised, as this substance is mainly concerned in the development of ova, and the process of reproduction. Its hormone is antagonistic to the one which is obtained from the interstitial cells of the ovary (oöphorin).

It has always been my belief that rickets and osteomalacia are diseases which depend for their origin upon some hormone deficiency or ill-balance, and I advance the suggestion for several reasons. Firstly, it cannot be denied that rickets will affect perhaps only one or two animals in a litter, or children in a home, notwithstanding that all are fed and housed alike. We may, therefore, reasonably look for the cause within the animal itself. It has been asserted, by those who have studied the subject carefully, that rickets does not necessarily arise from a lack of lime salts in the system, but more likely from an inability on the part of the organism to properly assimilate that which it has, so that it may become deposited in the bones. Now, thymus gland undoubtedly influences calcium and phosphorus metabolism, causing their retention in the body and inducing the proper nutrition of bony and nervous structures.

Parathyroid, too, has a specific action on the calcium content of the blood. The pituitary gland shares this function, and experimenters tell us that its extirpation would cause (among other things) disturbance in the development of the hair, teeth and bones. Could it then be possible that alopecia, dental caries, and rickets, are in any way connected with atrophy of the gland or deficiency of its secretion? These are only thoughts humbly put forward for consideration.

I still incline to the view that some future observer will eventually discover the etiology of rickets to be wholly connected with hormone deficiency.

Speaking at a recent meeting at Bristol, Mr. Scott said "he looked upon the calcium content of the blood as a very valuable factor in bacterial infections, especially those of a chronic type. Speaking generally, when we are dealing with a streptococcal and staphylococcal infection we have primarily a lowered calcium content, and he believed that by the administration of such agents as iodin, arsenic, and iron we activate the endocrine glands thereby raising the calcium content and producing an economic and effective type of immunity. We must not confine our attentions to one particular gland; the internal secretions work one with another, and where there is partial failure of the one, there may be a compensatory increase in another. He believed those glands are actively involved in the production of immunization, and the disturbance of their balance is possibly responsible for some of the specific infections."

According to Kalkus, 90 to 95% of the breeding difficulties in western Washington is due to the B. abortus Bang.

It has been shown that the virulence of a culture of B. aviseptica will be maintained for twelve months in a sealed culture tube.

The most palatable sunflower ensilage is made by cutting when about 65% of the sunflowers are in bloom.

The use of the live culture abortion vaccine in cattle during the early stages of pregnancy is a safe procedure, according to Zuick.

The vaginal secretion of 200 mares was examined bacteriologically by Sanae Umens and the following findings were reported:

84.5 per cent contained B. coli
71.5 per cent contained streptococci
62.0 per cent contained hay bacillus
28.0 per cent contained staphylococci

According to Retler antibody formation is a reflex phenomenon and it is not necessary for the antigen to come in contact with the body cells that form the antibody. This investigator further suggests that the reflex stimulation is probably not carried over nerve tissue.

There were 79,877 died of cancer in the United States in 1922. Malignant tumors are most common in the aged; however, 1½% of deaths due to cancer occurred about equally in males and females under 25 years of age.

Observation of the stomach, particularly its contour and contraction waves, has been accomplished. The stomach is lifted from the abdominal cavity through an incision in the median line and fixed by suturing beneath the skin. More than 50% of experimental animals operated upon have survived and been used for observation.

The popularity of tuberculosis control is largely reflected in the appropriations of over thirteen million dollars by various state legislatures and congress for the present fiscal year. This amount is double the appropriation for any previous year.

Significance of the Tuberculin Test in a Pasteurized Milk Supply*

J. H. Shrader, Ph. D., Director, Bureau of Chemistry and Food, City Health Department
Baltimore, Maryland

A person would almost be inclined to suppose that on account of the vast literature on milk, comprising as it does the subjects of animal husbandry, chemistry, bacteriology, biology, sanitation and epidemiology, there would be nothing further to say with regard to this important food. But experience teaches that the more we know about milk and its use, the more we realize the limitations of our knowledge as to the exact nature of what we are dealing with. The phase of the subject with which we are concerned at this moment is the public health desideratum that milk must be the normal secretion of a healthy contented cow and rendered safe by proper pasteurization.

Simple as this definition may seem, the actual accomplishment is a very different matter. Under each of these two headings of sanitary production and effective pasteurization, one meets many deviations of greater or less degree, which individually or collectively vitiate the above desideratum.

From the literature and from observation we note the various degrees of emphasis which different authorities place on the concept of what constitutes a satisfactory milk supply. There is the laudatory effort to eliminate gross adulteration as is manifest by the fraudulent skimming off of butterfat and the addition of water. Then there are those who concentrate their attention on cleanliness and decency in dairy farm operation.

The recognition that much tuberculosis in humans is of bovine origin laid the foundation for the widespread application of the tuberculin test of cattle as a public health measure. However, partly on account of the great economic question involved in this procedure and largely to eliminate the broader epidemiological significance as is involved in the relation of milk to such diseases as typhoid fever, septic sore throat, etc., the process of pasteurization was introduced.

With the widespread application of this latter procedure, there developed a decreasing emphasis in some quarters on approved sanitary methods of producing milk, based on the idea that since the milk is to be pasteurized, there is little need for much concern as to its healthfulness before such treatment. This idea is unsound because it is contrary to reason and experience.

In the first place, one need not expect that pasteurization or any other process can convert the abnormal milk of a discontented unhealthy cow into such a normal product as would come from a healthy cow. That the latter concept is the true public health idea has long been recognized from clinical observation in pediatrics.

The digestive tracts of infants are exceedingly delicate and exhibit reactions which can differentiate between milks so similar that the most refined methods of the laboratory cannot detect their difference. For example, nursing of a child by a mother is contraindicated if the mother is epileptic or tuberculous. Extreme emotions such as anger, grief, fright, passion or any great excitement may entirely arrest the secretion or so alter it in composition as to make the child actually ill. Worry or nervous strain may so change the milk as to cause it to disagree with the child who had previously thrived well upon it. In the acute febrile diseases of a severe type, the quantity of milk is reduced. Moreover, the composition of the milk may be materially altered as becomes evident at once when one realizes that milk is made from certain constituents in the blood which in turn are dependent upon the correct utilization of a proper diet. Febrile conditions markedly disturb metabolism and such disturbances may be as great in mild as in severe cases. The supply of salts may be measurably altered. The phosphatid production of fat may be disarranged, the nitrogen balance may be upset, and the toxic products may destroy tissue and interfere with its regeneration. In advanced cases of febrile diseases, the milk tends to simulate a fluid closely resembling blood serum.

It is certainly reasonable to suppose that if a child is adversely affected by such an imponderable condition as represented by the temperament of a mother, is it not also reasonable to

* Presented at Eastern States T. B. Conference, Providence, R. I., June 16, 1925.

suppose that it will be affected by such measurable changes as have been observed in the effect of pathological conditions on the composition of the milk.

Just as the above conditions obtain in humans, so similar findings have been obtained in the milk of cows. In fact, workers in animal nutrition have actually measured the difference in the composition of the blood coming to and coming from the udder when the cow's comfort was slightly disturbed. It is a general observation that the fat in milk is often reduced when cows are chased about by dogs or otherwise worried. Changes in diet produce marked changes in milk secretion. As discussed by Meigs, this is preeminently affected through changes in the quality and quantity of the amino-acid mixture circulating in the blood. Such changes are brought about by changes in the quantity or quality of the protein fed, and also by marked changes in the quantity of the non-protein portion of the ration. They tend to affect the whole amount of milk yielded rather than the concentration of protein in the milk, though the latter kind of change can easily be detected when the experimental conditions are appropriate. The amino-acid mixture circulating in the plasma, seems under certain circumstances to have an effect on the secretion of milk fat.

In view of the fact that the above measurable changes in the quality of the milk may be affected by the nervous condition and the diet, one can readily understand why a febrile condition such as obtains in bovine tuberculosis would cause metabolic disturbances which might deleteriously affect the milk. An infectious disease affects metabolism by changing either chemically or quantitatively the substances entering the body, by altering in the same way substances leaving the body, and by setting up new chemical processes in the tissues themselves. Probably all the tissues in the body are profoundly affected in their metabolic activity either through the direct action of the toxic substances or waste products, or indirectly through the nervous, respiratory, or circulatory changes.

In view of all these considerations, it becomes at once evident that the process of pasteurization will not correct these conditions. All that it does is to kill infective bacteria which are the organisms causing the common milk-borne contagious diseases—and it does this well. Neither does pasteurization remove the toxic products which were thrown into the milk by the bacteria which formerly lived therein. The only remedy is to get rid of the tuberculous cow to start with and then to handle the milk in such a cleanly manner that the subsequent invasion by bacteria will be at a minimum. Pasteurization should then be applied as a safeguard to remove any chances of human infection which may have been imparted during the passage of the milk through the many hands in its long journey under varied conditions of transportation to the far away city.

Another important reason why all pasteurized milk should come from tuberculin tested herds from which the reactors have been removed is the limitation of this process itself. Large amounts of careful scientific work have been done in our laboratories in order to ascertain the conditions under which harmful bacteria are to be killed. The experience of the health officers of a large number of cities over many years has clearly shown that with the advent of pasteurization of the milk supply there has been a marked decline in the number of cases of infectious disease. As effective as this process is for the purpose intended, experience shows that its efficacy must not be presumed on, because like everything else of human origin it has its limitations. These limitations are embodied in the design of the equipment and its operation.

The recent careful study of commercial pasteurization conducted and just published by the Public Health Service shows quite clearly that all pasteurizing machines did not effectively do their work. Lack of uniform heating, eddy currents, by-passing, dead ends, and such mechanical aberrations militate against effective performance. Moreover, unscrupulous dairymen "flash" a batch through even a holding vat by manipulating the valves by hand, and cover their sin by faking the automatic recorder. We even believe that some dairymen when caught short of their regular milk supply and unable to make up their deficiencies until after their pasteurization plant has closed down, resort to placing their bottles of hastily purchased unpasteurized milk in with their bottles of pasteurized milk in order to fool the inspector, if such should chance to drop around.

Furthermore, we have learned by experience that the farmer who is progressive enough and intelligent enough to go to the expense and trouble of having his herd tuberculin tested and then of keeping it so, is the type of milkman who is most likely to be a real dairyman, and who does the other things which are generally recognized as essential in the sanitary production of milk. He is more cooperative with the health department, he understands what is required, and he is the subject of less regulatory

effort than the more or less indifferent farmer to whom a cow is a cow and to whom milk is milk and who thinks that all of this talk about clean pure milk is humbug.

Thus, in order to obtain the product which we recognize as the public health desideratum, namely, the pure and normal milk of a healthy contented cow and furnished in a safe condition to the public, it is necessary that all the cattle be tuberculin tested to start with. This gives us a milk which is of high quality. It will be produced and handled by a careful and intelligent farmer and then, last of all, it is to be effectively pasteurized. We cannot rely upon tuberculin testing alone. But if we combine the two processes, we have instituted about as perfect a safeguard as we can erect for the benefit of the industry and the public. As Chief Dairy Inspector Strauch of Richmond has so well said, the eradication of tuberculosis from dairy herds supplying a city with milk is a health measure, and, as we all well know, pasteurization is not one hundred per cent perfect at all times, so that if all cows supplying milk have all successfully passed the tuberculin test, it is clear that another very valuable factor of safety has been added to the milk supply. Conditions being equal, he points out, a healthy herd of cattle will produce more milk at a lower cost than a diseased herd, which should prove advantageous to both producer and consumer.

All the above considerations are not purely theoretical ideas but have been actually incorporated in new regulations by the cities of Richmond and Baltimore. Tuberculin testing with removal of reactors is now in effect in Richmond, while in Baltimore, the regulations become effective on January, 1926.

Fatal Disease in Cattle

A. T. Kinsley

A fatal disease in cattle has occurred in east central Kansas and west central Missouri for the last two years. Practically all of the cases observed have occurred in mature cattle and excepting in a few instances there has been only one case on a farm. Cattle of all breeds have been affected. During 1924 the majority of cases occurred in the spring and early summer but several cases were reported in July and August in 1925. In practically all cases the affected animals were in good condition when the attack occurred. The feed was quite variable. In some instances the affected animals were on blue grass pasture and in others they were on dry feed. The water supply was from wells, running streams and ponds and was therefore apparently not a factor in the occurrence of the disease.

All cases thus far reported have occurred in cows excepting one bull reported by Dr. S. L. Stewart of Olathe, Kansas. This disease is quite fatal, only an occasional case recovers.

Cause

The cause of this condition is not known. It has been tentatively diagnosed as anaplasmosis but this diagnosis has not been verified. The variation of feed and water on the different farms where this disease has occurred would appear to eliminate them as causative factors. The usual occurrence of a single case on a farm apparently eliminates infection and parasitism. The occurrence of the disease in various stages of lactation and gestation and the occurrence of the disease in a bull diminish the possibility of disorders of the genital organs as etiologic factors.

Symptoms

This disease is usually manifested by dullness, depression, inappetence, icterus, usually constipation and a slight rise of temperature. In most cases the temperature does not exceed 103° F., and the fever usually subsides and becomes subnormal before death. A sensitiveness may be detected by palpation over the region of the liver. Dullness, depression and icterus become more marked as the disease progresses and the affected assumes the decubital position and the major portion of them die on the fourth or fifth day.

Autopsy Findings

There may be an escape of blood from the anus of carcasses dead of this malady. The most noticeable lesion of the disease is icterus. Practically every tissue and organ is intensely bile stained. The liver is tumefied and all bile ducts are gorged with bile. The gall bladder is full of bile that is apparently normal in color and consistency. The most important pathologic change occurs in the mucosa of the digestive tube and consists of inflammation and necrosis. This latter lesion is constant but variable in extent and occurs most frequently in

the duodenal mucosa, although it has been observed in the mucosa of the abomasum and colon. In some cases subendocardial hemorrhages were noted but they were not constant and probably not significant.

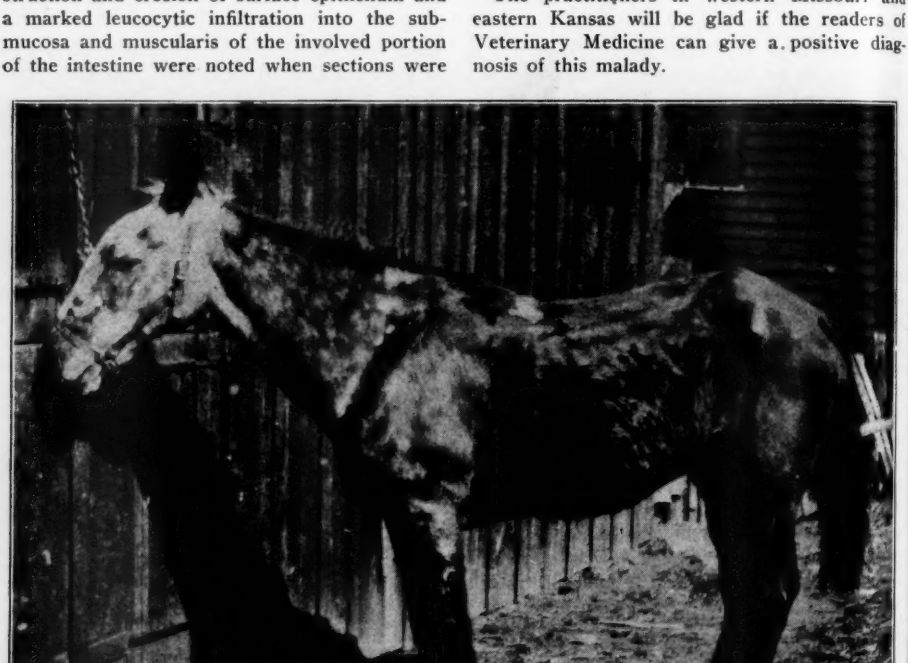
Laboratory Findings

Microscopic examination of blood smears and repeated culturing of blood thus far have given negative results. Staphylococci and streptococci predominate in cultures made from lesions in the intestine. Cultures made from the liver contained streptococci and usually a representative of the colon typhoid group. Destruction and erosion of surface epithelium and a marked leucocytic infiltration into the submucosa and muscularis of the involved portion of the intestine were noted when sections were examined microscopically. The liver cells were tumefied and degenerated.

Treatment

Although a variety of medicaments have been recommended and used, the results have not been satisfactory. From the symptoms evidenced, it would appear as though saline purgatives, calomel, podophyllin and colchicum were indicated but their use has given negative results. The possibility of the malady being an anaplasmosis suggests the use of quinin and arsenical preparations but these have not been effective.

The practitioners in western Missouri and eastern Kansas will be glad if the readers of Veterinary Medicine can give a positive diagnosis of this malady.



International Newsreel

"Old Bill," considered, because of his 57 years of age, to be the oldest horse in the world. A horse owned by Rev. Urial Meyers of Catawissa, Pa., was conceded to have had the record until he died some years ago at the age of 55... "Old Bill" has records to prove his age. His master, John Douders of Harmony, N. J., has been offered fabulous prices by circus men to part with the horse. "Old Bill" will plow without a rein on him and never balks at any job with the exception of working on a treadmill. He was born in 1858, and William Banghart, now 67 years of age, can remember when he plowed with "Old Bill" at the age of 15.

The Present Status of the Horse in Montana*

N. B. Smith, Billings, Mont.

What foundation is there for all the stories which are told of the decrease in the number of horses and mules in use, and of the decrease in the number of horses and mules in the United States?

Answers from 26,000 of the 65,000 crop reporters, to whom the Department of Agriculture sent questionnaires, are the basis of a report which shows a shortage of young animals in the United States. Only 3 per cent of the horses and 3.8 per cent of the mules are under one year old (1924 colts).

Applied to the estimated total for January 1, 1925, these percentages give us 527,670 horse and 205,618 mule colts in the 1924 crop. The total, 733,288, is less than half the estimated number of deaths per year.

According to government estimates, there were 17,589,000 horses and 5,411,000 mules on farms January 1, 1925, and approximately 2,000,000 horses and mules in non-agricultural work. If we figure the average age of horses and mules on farms as 15 years, 1/15, or 1,533,333 die annually. Because horses and mules average five years of age before they get into non-agricultural work, they have only ten years at work. Ten per cent loss in that field of work is 200,000; thus the total losses are estimated at 1,733,333. There are possibly some errors in these figures, but for general purposes we may assume them to be fairly correct. We then find we are producing less than half as many horses as are dying each year.

The figures (from the same source) for Montana show that five out of every 100 horses were under one year old; 16 out of every 100 were four years old or under; 27 were over ten years old. Two out of every 100 mules were under one year old; 52 out of every 100 were over ten years old. This means an increase in horse but a decrease in mule production over the previous year.

However, a large proportion of horses reared in Montana and surrounding states in the past have been too small and poor to find a market outlet. Far too large a number of broom-tails, bronchos and mustangs were foaled. These, weighing only about 700 pounds, ran the ranges in great numbers. Recently a packing plant contracted for 12,000 hourses at $2.50 per head for processing and packing for food. They undoubtedly could have procured 100,000 more had they wished to.

Horses weighing less than 1500 pounds have only two possible outlets aside from use as saddle horses—farming and light delivery work.

Farmers are unsatisfactory as buyers for they will not pay enough for work stock to cover the expense of raising the horse. They usually tell a dealer to buy them a horse for $150. When the dealer has taken out a bit to cover his expenses, risk, freight and profit or loss, he can pay no more than $110 or $115, which is, of course, not enough to pay for raising an animal for five years. The demand for light delivery horses in the city is not at all great now. Many businesses which formerly used wagons have gone over to light trucks because of the increased difficulty in locating suitable stables or barns.

As long as the merchant can pass the additional cost along to his customers, he will continue to use motor delivery units. When he will want such light weight horses is impossible to say. For milk delivery and some laundry work, 1400 and 1500 pound horses can be used to good advantage. The tendency, however, is to use horses slightly heavier than is absolutely necessary. Men find they are fully repaid in additional service, dependability and time in service.

The one remaining use for horses in the city is in short hauls and heavy hauls. People in transportation and other heavy lines of business demand horses weighing from 1600 to 2000 pounds in order to carry on their business to the best possible advantage. The animals must be well muscled, of good quality and weigh heavy in work condition. Farmers who have such horses will have no trouble in disposing of them today or at any time in the next eight or ten years for a very fair price.

I do not advise any man to raise more horses or mules than he can use for replacements on his own ranch. Raising horses that will weigh 1600 pounds and over when grown out and in working condition and using them for farm power until they are six years old, then selling

* Presented at the meeting of the Montana Veterinary Medical Association, Helena, Mont., July 17, 1925.

them at peak price, will pay. In order to do this, a man must keep his teams staggered in age and hold production to actual needs. For instance, a 240-acre farm would have four pairs of work animals, 3, 4, 5 and 6 years of age, at least half of which were mares. Enough mares will be bred to rear a pair of colts each year. A pair of foals, yearlings, and two-year-olds represent the young stock under this policy, and each fall a pair of six-year-olds is sold off because a pair of two-year-olds coming three will be available to take their place the following spring.

Men who have followed such a general farm policy have made money on their horses and mules. The animals they used have increased in value while at work and have sold before depreciation set in. Last but not least, their stock has steadily improved under good breeding and feeding.

The man who has poor horses and mules, who never can get good prices, who is always cussing the horse business, is the man who ought to stay out of the game. The best thing he can do for horse and mule breeding is to leave it alone.

The production of race horses is a specialty, fascinating but expensive. A very few men can make it pay, but it is a gamble. Most race horses (trotting, pacing or runnning) are bred and raised by men who have independent sources of income, to whom the loss of $10,000 or $15,000 per year is but an incident. Such men, in the game for the sport of it, are able to spread their losses over years when fortune smiles on their race horses. Some break even in the long run, but the majority charge off losses to the fun they have out of it, which a farmer dependent on his farm cannot do.

Horse and mule production is but an incident to farming. When so considered, held to proper limits, with strict regard for future demand, it will return a fair sum each year, made up of accrued investment and a moderate profit. A pair of horses or mules sold for $500, may represent $450 of stored up feed, shelter and labor costs, plus a $50 profit; but they have done effective work for three or four seasons, and the total cash they bring in is none the less welcome because part of it does represent accrued investment. Breeding should be undertaken with full knowledge of all such factors governing present and future supply and demand.

The existence and continuation of the veterinary profession is dependent upon giving value received in services rendered. Incompetent veterinarians and those who overcharge are not only discrediting themselves but also the veterinary profession.

Tetanus in recently castrated pigs is relatively common, particularly if such pigs are permitted access to stangant ponds and muddy pens. About 50 per cent recovery can be obtained by carefully dissecting away the tissues adjacent to the castration wound and providing sanitary surroundings.

According to a report from the State Veterinary Bacteriologic Institute, Stockholm, Sweden, an increased resistance can be produced in cattle by the use of dead or living B. abortus. Vaccination with dead cultures is recognized as an offensive measure in cleaning a herd of abortion disease.

Parasites, external and internal, damage their hosts by mechanical injury, by direct abstraction of nutrition and the sucking of blood by elaborating and eliminating chemic substances that cause local irritation, hemolysis, and other injuries to the tissues, and by acting as carriers of microbian infection. Thus parasites are frequently responsible not only for unthriftiness and loss of flesh but also loss of life.

The necessity of improving breeding and feeding of beef cattle is forcibly indicated by the fact that only about 5 per cent of the cattle received in the Union Stock Yards, Chicago, Ill, grade prime or choice.

One colt has been raised each year during 1921, 1922, 1923 and 1924 for each forty horses on farms in Ohio. A similar condition has prevailed in nearly, if not all, other states. It is evident that unless there is a marked increase in breeding there will be a shortage of horses within three or four years.

The height of the arch in the human foot has served as a standard in the selection of recruits in the army. This method of determining the foot efficiency of soldiers has been found to be unreliable. The proper distribution of body weight is a more reliable standard, according to Morton of Yale, upon which to base foot efficiency; thus the flat foot does not signify a weakness.

Poisonous Plants

L. H. Pammel, Dept. of Botany, Iowa State College

KNOW YOUR WEEDS

Under the above title the Daily Drover's Journal of Chicago, Illinois, (July 14, 1925) published a most interesting comment on poisonous plants. The article is most timely and we repeat the whole with more comments.

"The havoc caused by poisonous weeds in fine herds of cattle this spring in the midwest, particularly in Illinois, suggests that it is only good business for a man to know what kind of weeds he has in the pastures where he keeps live stock. There are a number of weeds which grow in pastures all over the midwest which appear as innocent intruders when they really are death-dealing if eaten by stock.

"As a rule animals avoid these weeds when grass is plentiful, but in a season of poor pasture like we have in many localities this summer the danger is increased. We are trying all we can to help our readers avoid the heart breaking losses which have come to some herd owners recently, and come to some every year, by printing news of these losses as a warning, as well as printing articles which will help farm folks identify these enemies. When you see anything from now on mentioning weeds, stop, look and listen, if you please. Don't pass the article by thinking it is something only for children and botanists.

"Some of the finest bulletins issued by our state experiment stations and the federal bureau deal with poisonous weeds. These can usually be obtained free upon request. A weed to watch for now is the snakeroot. Farm boys and girls have made fine weed collections in many instances. Why not more? Or how about a farm tour with the idea of visiting bad weed patches? Surely much better than going to see a pile of dead animals."

Many isolated cases of stock poisoning have been reported the past few months. These have been necessary because cattle, sheep and horses have been forced to feed on plants that they would not use where there is an abundance of forage. Ragweeds, golden glow, cowbane, snakeroot, purple loosestrife, and a host of other weeds all too common in our pastures, woodlets, and meadows. Let the farmer make a study of these plants.

I have been visiting some of the different sections of Iowa. I noted that all kinds of live stock seem to avoid the vervains, the blue, hoary, and white. They are certainly avoided during favorable moist conditions in pastures, but are perhaps occasionally eaten when it is very dry. I wonder if anyone has a record of these vervains being poisonous to live stock.

There came to my notice the other day an item of the loss of five head of live stock which were turned into a pasture in Story County containing Sudan grass, and I was asked whether this was poisonous. Certainly not when the hay is well cured. There is great danger in its use during dry weather and when the plants are partially wilted. It appears that the deadly glucoside, dhurrin, which is related to amygdalin, if not the same, is more apt to occur where the plants are partly wilted. While Sudan grass is a valuable forage plant and its growth should be encouraged, caution should be used when it is fed to live stock.

Mr. M. A. Smith who is looking after the barberry eradication work in Iowa, brings information to me that there has been a number of cases of poisoning of calves in Pottawattamie County by white snakeroot (Eupatorium urticaefolium). This plant is extremely prominent in the woodland pastures. Specimens were brought in to Mr. F. M. Beymer of Avoca, with the claim that these weeds caused considerable loss of stock.

CLEAR WEED

Mr. L. E. Troeger, of the Chicago Daily Drovers Journal, sends the following letter:

"Enclosed find several leaves of weed sent to us by Mr. L. W. Halver of Chester, Iowa. He is suspicious that it is snakeroot. Will you identify it if possible?

"The leaves seem to have the veining which is characteristic of snakeroot.

"No doubt you are familiar with the fact that quite a number of cattle have died from the poisonous effects of eating the weed this spring. We have had several stories."

The plant sent for identification is a member of the nettle family and it is commonly called clear weed, and known to the botanists as Pilea pumila. No evidence has come to my notice that this plant is poisonous. However, it may be, as stock generally will not eat it. Owing

to the droughty conditions of this summer, live stock have eaten a great many plants that they otherwise would not have consumed. It may further be of interest to note that the same kind of place that produces the clear weed also produces the snakeroot. The leaf of that plant closely resembles the leaf of clear weed. As the specimens are fragmentary it is impossible to absolutely identify the same. If Mr. Halver will look over the woodland pasture a little bit later and send to us a larger specimen we will be able to more accurately identify the plant. I am satisfied, however, that many of their complaints that have come to us this year from poisonous plants are due to the fact of shortage of forage and the animals have consumed material that they otherwise would not.

IS CORN SMUT POISONOUS?

The evidence that smut of any kind may be injurious to livestock has had an affirmative and a negative answer. The experiments performed by Professor W. A. Henry some years ago seemed to indicate that it is injurious. Again, experiments made by others indicate that it is not injurious. How can these two contradictory statements be reconciled? I think in this way. Corn smut is a highly nitrogenous food; in other words, when this material is consumed by stock without a properly balanced ration, it will prove injurious. If on the other hand the corn and barley smut is fed in only moderate amounts with plenty of carbohydrates, I think there is little danger. Actual poisonous substances in corn smut have been found only in very limited amounts.

WILD CARROT AND COWBANE

Dr. G. A. Vandre of Edgewood, Ill., writes the following letter:

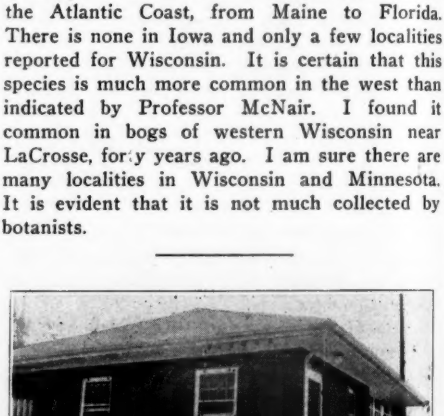
"I am sending under separate cover a weed which grows in a clover patch. Would you give me information of name and whether it contains a poison. It is a strange weed to me."

The weed sent by Dr. Vandre is known as the wild carrot, Daucus Carota. It is a well known, widely distributed weed common in clover meadows and waste places in many parts of Illinois, Wisconsin, Minnesota and Iowa but much more abundant in meadows eastward as in New York and Ohio, where I noted a year ago that the fields were absolutely white with this plant. This carrot is the same as the cultivated carrot except the root is not as large. So far as known this plant is not toxic nor does it contain a poisonous substance but in many places in Dr. Vandre's vicinity and in the north generally there is a weed that closely resembles it with white flowers. The leaves are, however, smooth and much larger and the plant known as cowbane, has a powerful pungent odor. It is common in low grounds and native pastures and meadows. This plant is powerfully toxic. Now it is possible that if cattle had access to a pasture containing this weed they were poisoned from it.

POISON SUMACH

Professor James B. McNair in the American Journal of Botany for July, 1923, has an account of the distribution of the poison sumach or poison oak as it is sometimes called. This is the most poisonous of the sumachs.

According to reports sent to him this species is most abundant in eastern North America on the Atlantic Coast, from Maine to Florida. There is none in Iowa and only a few localities reported for Wisconsin. It is certain that this species is much more common in the west than indicated by Professor McNair. I found it common in bogs of western Wisconsin near LaCrosse, forty years ago. I am sure there are many localities in Wisconsin and Minnesota. It is evident that it is not much collected by botanists.



Hospital of Dr. H. J. Magrane, Mishawka, Ind. The building was completed last June at a cost of $5,000. It is 33 feet by 30 feet and includes a reception room, office, operating room, general ward and an infectious and contagious disease ward. There are 15 kennels in the general ward. Sanitation has been adequately cared for by four drains in the building. Running water in every room assures quick disposal of sewage and other waste. Veterinarians from Indiana, Illinois and Michigan, who have inspected the hospital are of the opinion that while there may be some larger there are none better. In addition to conducting his practice, Dr. Magrane is city health officer He is president of the Northwest Indiana Veterinary Medical Association.

Observations of Tick Paralysis in Sheep*

A. F. Baldwin, Miles City, Mont.

Tick paralysis in sheep is of importance, not only from the investigation standpoint, but is an economic problem of the sheep, horse and cattleman. It has opened up new lines of thought for all who are interested in public health work and demonstrates the importance of closer cooperation of those working on the problem from their respective viewpoints, the entomologist, pathologist, veterinarian, the physician and the range man. If it were possible to educate the range man to report his losses immediately as they occur, it would be of great value in obtaining important facts. It is this age old pride of the range in not having a loss that keeps the valuable information of a small loss in sheep from being reported. As yet the loss from death has not been over ten per cent, though there has been a loss in condition of the sheep as well as an unknown loss in the wool and lambs.

The range diagnosis of 1923 was backed up by the findings of the Hamilton laboratory in that the wood ticks collected from sick and dead sheep were infected, and the tick virus, the Rickettsia of spotted fever, was demonstrated. This year only one lot of ticks were reported back as having produced symptoms of spotted fever in the guinea pig, but in all other lots, Bacterium tularense was demonstrated. This opens a new line of thought, for it was not until the results of the work done by Dr. Parker in 1923 that Bacterium tularense was demonstrated in the wood tick, Dermacentor andersoni Stiles. It is absolutely necessary to know the life cycles and hosts of the tick in order that one may better understand the extent of the problem in combatting this disease. From data obtained of Dr. Parker personally, the small rodent is the host for the larvae and nymph cycles, while the larger animals, including man, are the hosts for the adult ticks (Reference to the life cycles of the wood tick are found in the study by Parker).

D. andersoni, like many other external parasites, undergoes an interesting and complicated life cycle. The adult female, after engorging to many times its normal size, drops from its host and crawls to a sheltered place. Before leaving the host, the female is impregnated by the male, which feeds only a short time before seeking its mate. The female remains quiescent a week or more, depending on the temperature, and then begins the deposition of eggs—from 2000 to 7000 in number. This sometimes takes a month or even longer. The eggs hatch to seed ticks or larvae, which are not more than one-thirty-second of an inch in their longest diameter. These six-legged larvae feed on rodents, such as ground squirrels, chipmunks, field mice, rabbits, etc.; fifty or more may be found on one small host. After feeding from two to four days and attaining the size of a millet seed, they drop to the ground, pass through a dormant stage, and shed the outer skin, emerging as eight-legged nymphs which are sexually undifferentiated. They do not become active, however, until the following spring. Like the larvae, they feed on rodents and engorge in from three to ten days, finally reaching a size slightly smaller than buckshot. The engorged nymphs then molt to the adult ticks, males and females, which pass the winter in a dormant condition. The adults attach themselves only to large animals, including man, and are seldom found on animals smaller than a jack rabbit. The larval and nymphal ticks, on the other hand, have never been found on any but small animals, though occasionally nymphs have been removed from children. Although under normal conditions the cycle from egg to adult is completed in two years, it frequently happens that the ticks do not secure a host during the season in which they become active. This causes a high mortality among the larvae and nymphs. The adults are able to survive for two, three, and occasionally four years, without feeding. In this way the life cycle may be considerably lengthened. In the laboratory, however, they are often forced by artificial means to complete the cycle in three months.

This again assists the investigator, for in each locality the rodent life is controlled by the vegetation. In eastern Montana, the jack rabbit is the principal rodent host of the tick, living in the open prairie and sage brush countries. The seasons are more marked so that the time of the appearance of the tick is likewise more marked, not extending over long periods of time as in

* Presented at the meeting of the Montana Veterinary Medical Association, Helena, Mont., July 17, 1925.

the mountainous country. The disease appeared the last of March this year, our season being about thirty days earlier than usual.

From the experience had at the laboratory in Hamilton, it is of the utmost necessity to be careful in procuring data in this work due to the possibility of becoming infected. It is, therefore, important that those engaged in this work use not only ordinary precautions, but extra precautions even in the removal of the wood tick from a sick or even from a healthy animal as the excreta from the tick is infective.

The first thing the sheepman thinks of when a small loss occurs in the spring after leaving winter quarters is "the weed," which covers a multitude of troubles. The symptoms as seen in tick paralysis, looking at the entire band, are similar to the so-called loco poisoning. The affected will throw the head up, start running, going to either side, fall down, in some cases being unable to regain the use of their feet. Again others will stagger to their feet but on being moved will fall. In most cases death follows in a few hours, though some will live two or more days. In the cases of 1923, if all engorged ticks had been removed, the sheep would then be able to stand in one to twelve hours, making an uneventful recovery. This fact seemed constant in that on each sheep that died engorged ticks were found after death.

In human cases it has been found that the first symptoms are noticed in from three to five days on the average after exposure. This seems to be about the length of time in sheep also, for the first cases in a band are noticed within a week's time after the infestation with ticks.

At the point of attachment of the tick is a dark spot varying in size from one-fourth inch to an inch or more in diameter. In cases where the tick has dropped off, there is a small ulcer of a punched-out appearance, the lymph glands that drain the affected parts are sometimes swollen, quite painful to touch, and in one case (Pope ewe) the left inguinal broke, liberating a grayish yellow granular pus.

In the first case reported this year from the north side near Calabar, the Danford-Crawford band, the ewes were aborting within two to three weeks of full period of gestation. The ewes would seem to gain strength and in a few cases were able to get up but were weak and staggering, usually had to he belped up for a few days, but making a good recovery if all engorged ticks had been removed. Blood samples taken from a recovered ewe of this band gave positive agglutination of Bacterium tularense, and the ticks taken from this ewe sent to Hamilton produced tularemia in the guinea pig.

This year many more ticks were found on the sheep than was the case in 1923, when one would have to look carefully in the wool along the course of the large veins of the neck, abdomen and legs. The old idea that a thrifty sheep with plenty of grease in the wool would not become infested is not true, as was demonstrated in the Cusick sheep. These sheep were dipped in the late fall, were fed grain during the winter and were in wonderful condition until they became infested with wood ticks on the first of April, when in ten days they were in poor condition due to the fact that they were too busy scratching, rubbing and digging to eat. They were free of sheep ticks but literally alive with wood ticks, engorged ticks being found any place on the body, even on top of the head. There was no abortion in this band, but the lambs were all under size. The ewe loss in this band was one per cent, while ten per cent were down and had to be hand picked. No doubt this small percentage is due to the fact that only a small per cent of the ticks were infected in this locality. A saddle horse used in herding this band became weak, staggering in gait and could not be used. However, after the removal of engorged ticks, the horse made a good recovery. The owner of this band of sheep, Mr. Cusick, was of much assistance, he himself having had the spotted fever in 1914 while in the Musselshell country.

When the Barley sheep left winter quarters, the yearling band became infested as they were ranged up East Fork of Sand Creek. There was a loss of one per cent in this band. Ten per cent of the band were affected and had to be hand picked. The ewe bands were ranged on the other side of the divide and were free from ticks until reaching the Porcupine Range where they became infested and a loss of less than one per cent resulted. A herder of one of these bands was bitten by a tick and developed spotted fever the last of May.

Up to the present time it was thought that the larger animals were not susceptible to the infection either of spotted fever or tularemia. However, tularemia has been demonstrated in the sheep, and there is but little doubt that it will be found in the other animals such as the horse and cow. A report from the Coal Creek Range of a loss of several young horses infested with ticks seems to bear out this assumption.

A peculiar condition is made evident from the data gathered in eastern Montana by the ones engaged in this work. The human cases originating in the area where spotted fever organ-

isms were demonstrated from the ticks sent to Hamilton in 1923, also this year, have been typical spotted fever cases and were due to tick bites. The six spotted fever cases presented the following symptoms: weakness, fever, swelling of the limbs and head, paresis, delirium, dark purple spots all over the body which as the fever subsided became lighter in color, the fever being at its height from the tenth to the twelfth day. Cases from the areas where the Bacterium tularense was demonstrated have been tularemia in its many forms as can be seen from the following cases, in all of which the symptoms were weakness, fever, paresis, swelling of glands draining the parts affected.

A case of tularemia infection from rubbing the eye with the fingers after removing engorged ticks from horses was accompanied by the swelling and the breaking down of the periocular glands. The blood of the horses from which the ticks were removed in this case did not agglutinate B. tularense.

A case of tularemia due to tick bite on the leg above the ankle with corresponding swelling and breaking down of the inguinal gland.

A case of tularemia from the bite of a coyote cub on the hand with swelling and breaking down of the axillary gland.

A case of tularemia from a tick bite on the top of the head with swelling and breaking of the glands draining the parts.

Working on facts obtained from all sources, a practical demonstration is being worked out on the Barley Brothers' range for the control of wood ticks by waging a war on all jack rabbits and cottontails. With the cooperation of the few people that live in this area, together with the Barley brothers instructing each herder to kill the rabbits, we will in the next few years be able to see if our theories are really practical, for the sheep on portions of this range were alive with wood ticks. The results will not be known for at least two years. This range includes the area from which the human cases of spotted fever originated and from which in 1923 the greater number of sheep paralysis cases originated.

Swine Plague Prevalent

A. T. Kinsley

Several veterinarians have reported the losses of swine from a malady, the symptoms and autopsy findings of which characterize swine plague or hemorrhagic septicemia. The disease in question is as prevalent in swine that have been treated with anti-hog cholera serum and virus as in those that have not been treated. It is most common in shotes weighing 50 to 125 pounds, however, some aged brood sows have died. The losses rarely exceed 10 per cent of the herd. The disease does not spread rapidly in a herd and the losses are rarely more than one or two a day in a herd of 50 or 100. Some affected hogs recover after an illness of three or four weeks but they do not develop and fatten as rapidly as the unaffected individuals, and hence the financial loss is of considerable importance. Because of the possibility of this malady becoming widespread, a brief description of it at this time may be of value to the practitioner.

Cause

Swine plague is a specific infection caused by the B. bipolaris, a short, bipolar, staining, polymorphic, non-motile, non-spore forming organism that grows readily on practically all culture media aerobically and anaerobically. This organism is easily destroyed by disinfectants. Small experimental animals are susceptible to the pathogenic action of these organisms and by the use of certain strains it is possible to fatally infect practically any of the larger animals. It is generally conceded that infection with the bipolar organism occurs most frequently when the resistance of the exposed animals has been reduced. Thus, swine plague is prone to occur in swine that are affected with hog cholera or necrotic enteritis and those that are harboring parasites. It is more common in swine that have been subjected to the hardships of shipping, in pigs that have been recently weaned, and in swine that are improperly fed and housed.

Symptoms

The period of incubation, at least in artificially infected cases, is of short duration, rarely exceeding two days. The septicemic type of the disease has a sudden onset and is characterized by a diminished appetite, weakness and a temperature of 105° to 106° F. There may be a blush or congestion of the skin, particularly on the venter surface of the abdomen. This form of the disease is rapidly fatal, the course rarely exceeding twelve hours.

The pulmonary form of the disease is the most common and is the type usually designated swine plague. Pulmonary swine plague is evidenced by a short, dry, spasmodic cough, dyspnea, temperature up to 105° F., mucous or mucopurulent nasal discharge, impaired appetite, usually constipation and a tendency for the affected animals to sit on their haunches. As the disease progresses, breathing becomes more difficult and there will be extreme weakness and marked emaciation. The usual course of the acute pulmonary type is about one week and the percentage of fatality is relatively high. In the prolonged subacute or chronic cases of pulmonary swine plague, there is a persistent cough, emaciation and weakness and it may terminate fatally in four to six weeks. A varying percentage of swine affected with the pulmonary form of swine plague ultimately recover but they regain their lost flesh and vigor so slowly that they are usually a liability rather than an asset.

There may be an intestinal and cerebral form of hemorrhagic septicemia in swine but these forms, and particularly the intestinal type if there is such, are so admixed with other infections that they are difficult to identify as separate entities.

Post Mortem Findings

The septicemic type is manifested by petechial hemorrhages in the serous and mucous membranes and possibly also in the skin. The lymph nodes are usually tumefied and hemorrhagic. There may be hemorrhages in the kidneys and in other organs.

The pulmonary type of the disease is characterized by an atypical catarrhal pneumonia, different areas of the lung showing different stages of the disease, such as congestion, red hepatization, gray hepatization and resolution or necrosis. The different stages of progress of the disease result in a mottled or marbled appearance of the lung. In swine plague pneumonia the interlobular spaces are clearly outlined because of the excessive edematous infiltration. The bronchial and mediastinal lymph nodes are usually tumefied and hemorrhagic and in the chronic cases the nodes may contain necrotic areas. The pleura, at least that lying adjacent to the involved area in the lung, is usually affected with a fibrinous inflammation and there are usually adhesions of the visceral and parietal pleura.

Diagnosis

The septicemic type of porcine hemorrhagic septicemia is difficult to differentiate from hog cholera. A careful consideration of the history of the outbreak, symptoms and lesions will usually give the basis for a correct diagnosis, although in some instances the demonstration of the B. bipolaris of hemorrhagic septicemia or the filtrable virus of cholera is the only certain method of making a positive diagnosis.

The pulmonary type or swine plague is not difficult to diagnose if the postmortem lesions are properly interpreted.

Treatment

Prevention by enforcement of sanitary regulations is of considerable value in the control of this disease. The spread of the pulmonary form of the disease is apparently favored by dry weather, probably because of the irritating effects of dust.

The use of aggressin in immunizing healthy herds should be advocated and the use of swine plague bacterin has been found of considerable value in diseased herds.

Excessive losses from overheat of swine, cattle and sheep, occurred in the various stock yards in the middle states during the heat wave in the latter part of August and first of September. The most extensive losses occurred in shipments from mountain pastures and ranges. In one shipment of cattle from southwest Colorado, to a Missouri river market, there was a loss of over five per cent. The post mortem findings consisted primarily of pulmonary congestion. Such losses can be diminished by loading light and frequent unloading for feed, water and rest.

"Lubber," the world's largest horse on record, a five-year-old bay gelding, 21 hands high and weighing 3,000 pounds. Owned by A. E. Ponton & Co., Wisner, Neb. Dr. O. O. Person of that city is one of the owners. The horse is a cross-bred, the dam a Percheron and the sire a cross-bred Shire and Belgian.

Cold Weather Diseases of Poultry

B. F. Kaupp, Author, Poultry Culture Sanitation and Hygiene, Essentials of Poultry Raising, Poultry Diseases, Anatomy of the Domestic Fowls, and Animal Parasites and Parasitic Diseases

Each of the four seasons of the year brings its group of diseases which are due to the peculiar climatic conditions. In cold weather come the respiratory diseases, some of which have been discussed in these articles. In addition to these are such conditions as frosted or frozen combs and wattles, and further we have to describe a peculiar condition of edema of the pharynx incident to a cold spell of weather several years ago.

Frozen Combs and Wattles

The degree of cold at which the comb and wattles freeze depends on several factors. The humidity in the house and the physical condition of the bird and its heart action are important factors as well as the atmospheric temperature. A weak heart means a sluggish circulation, and the more sluggishly the blood flows the slower it passes through the dependent parts and the quicker the comb or wattles freeze.

Wattles may freeze more readily than the comb as the bird in drinking will drip water on the wattles which may freeze.

If the over-chilling of the comb or wattles is to such an extent that the cytoplasm forms crystals, then the cells will be destroyed and that part so frozen turns dark and finally black. Such a bird should be removed from the balance of the flock and the parts rubbed with carbolized vaselin or any "healing" ointment once or twice a day. The frozen part will finally drop off as dry gangrene follows the freezing. Wattles are similarly treated. Quite frequently following freezing of the wattles there accumulates a quantity of serous fluid which extravasates into the interior of the wattle which may accumulate a serous fluid to the extent that the parts may become as large as hen's eggs. In such cases in addition to the external treatment it is advisable, with a sharp scalpel, to make an incision at the lowest point and allow the straw colored fluid to drip out. Usually by keeping the birds in warm, comfortable quarters and these simple lines of treatment, recovery easily takes place. The birds should be fed mash and plenty of water as well as green feed while in the hospital.

How to Prevent Frozen Combs

Birds in open front houses can stand lower temperatures than where the house is not of modern style and is tightly closed, because the more free circulation of air allows the watery vapor from the lungs of the birds to disseminate more rapidly and the humidity is lessened. In colder parts of the country where the temperature goes below zero, drop curtains are needed over the open front. The front of the house should also be provided with windows through which the light will enter the house so that the birds can see to scratch for the grain thrown in the litter on the floor. In some countries, where the humidity is very high and the temperature goes very low, as in some parts of Holland, roosting coops are built around the perch poles so that the bird literally has a perching house within the larger house. It is claimed that under these conditions the combs do not freeze under the most severe weather conditions. Many houses are made deep and the interior ceiled in the back, sides and ceiling as far forward as the front part of the dropping boards. There is not nearly the amount of cold weather trouble where the dropping boards are placed far back in a deep house as there is in the more shallow houses. A house should be sixteen to twenty feet deep.

Edema of the pharynx of a game cock.

Broken Beaks

Oftentimes when the birds are placed in their smaller inclosures, especially during the winter months, fighting may occur through the wire netting partition or through the netting fence and such occurrences are fruitful sources of broken beaks and especially of the upper beaks. Such a fowl needs attention. It may starve through its inability to pick up feed or its beak may grow deformed.

The bird should be given feed in such a way that it can easily pick it up, or the new and developing horny material may become injured. Mash, both wet and dry, given in a cup, is recommended. The cup should not be allowed to become so nearly empty that the bird strikes the bottom with its beak.

Often chicks are hatched with crossed beaks, making the act of taking up feed a difficult one.

Edema of a Game Cock

A breeder of game cocks brought a peculiar case to the hospital with the history that the birds were allowed to roost in an old barn and ran at large through the day. Coincident with a cold, damp spell of weather was a condition of edema of the mucous membrane of the pharynx. At first the bird showed evidence of difficulty in taking up and swallowing food and especially grains. The mouth seemed full and spongy and finally the condition becoming more aggravated, the mass protruding from the mouth. This is illustrated in the accompanying figure. The bird finally found it impossible to eat, indisposed. The next day there protruded from the mouth quite a fleshy-looking mass, pushing the tongue out on the right side. Upon close examination it was observed that the mass had pulled out the larynx and part of the upper portion of the trachea. The swelling was lanced at the lowest point, from which there dripped a quantity of straw colored fluid of a serous nature.

Proper Winter Feed for Poultry

Of the many things that are likely to be neglected in the winter time, on account of the weather conditions, are green feeds and water. The egg is 65 per cent water and for the bird to make four to six eggs a week, it will require a constant supply of water. This must be before the birds every hour of the day. To do this when the weather is below freezing is not always so easy. Where electricity is available, often a heater is used and then there are on the market kerosene oil burners which keep the water warm.

The green feeds are essential, especially for the breeding birds, as the birds must depend on these for their supply of fat soluble vitamins. Fat soluble vitamins as well as other elements are essential for proper fertility and hatchability of eggs and livability of the chicks. The winter green feed may be turnips, or mangels, or better, cabbage or collards, or sprouted oats.

An infectious pneumonia of sheep in portions of Japan has been found to be due to infection with B. pyogenes. A mixed vaccine prepared from this type of microorganism diminished the losses very materially.

A scientific committee has been investigating canine distemper at the kennels and dog hospital of the National Institute for Medical Research, Mill Hill, England. No bacterial organism has been identified as the causative agent and the virus is filtrable under certain conditions. There has been some encouragement in the development of a successful method of immunization.

The feeding of boars is an important factor in breeding efficiency. Barley and oats, either separately or combined, in equal parts supplemented with mangels or root crops constitute a splendid ration. A strictly corn diet will not give the best results.

The problem of supplying a clean, wholesome milk to a large city requires skill and ingenuity not only of the dairyman, but also the transportation companies. Thus, 68% of the milk supply of Chicago or approximately 44,000 eight gallon cans of milk were delivered daily during 1926 by twenty-six railroads and 32% was delivered by motor trucks.

Sodium hypochlorite has proved effective in purifying drinking water and the water in swimming pools. It has been presumed that the action of the hypochlorite was of a chemical nature and due to oxidation, but it has been found that the quantity of the hypochlorite necessary to purify a given volume of water was insufficient for chemical reaction and it has been suggested and apparently demonstrated that the action of the hypochlorite in impure water is due to ultra-violet rays that emanate from this compound.

Alsatian Wolfhounds

R. E. Alexander, M. R. C. V. S.

Dogs of this interesting breed, in spite of their wolf-like appearance, will be found truly "doggy" in their characteristics and, in the majority of cases, free from vice. The present popularity of the breed has resulted in many of these dogs being kept in unfavorable surroundings, such as small houses with little garden space, so that they do not get an outlet for their surplus vitality. And the vitality of the Alsatian wolf-dog is surprising, as the following experience will show.

I received a fine specimen of the breed as a boarder, and before parting with him the owner warned me that if left alone too much he had an annoying habit of barking incessantly. Being in an optimistic mood at the time (some clients had unexpectedly paid their bills), I gave the blithe assurance that all would be well, and the animal was left in my charge. And then I found that what the owner had said was all too true,—unless "Reginald" was constantly entertained he barked without intermission for hours on end. His bark was powerful, and could be received on crystal sets within a radius of a quarter of a mile. Fearing the reproaches of the neighbors, I desperately sought to entertain him.

Taking Reginald to an enclosed plot of grass, I played the old-fashioned game of "tick" with him. That is to say, I would run a few yards until Reginald caught me. Then rearing himself on his hind legs Reginald would push me in the chest, and bowl me over. After that he chewed my ear, and then it was my turn to run after him. He enjoyed it immensely, but personally I found it rather fatiguing. So I returned Reginald to his pen, and he barked worse than ever.

Perhaps he would like another dog to play with? That would be a labor-saving idea. So I turned him loose again to play with the other dog.

Well! After the other dog was sent to the infirmary to have its wounds dressed, Reginald became still more bored, and the barks became howls. His larynx, seemingly composed of wrought iron, was of the kind that improves with wear. The only thing to do, I thought, is to exhaust him. I have a free afternoon, I will take him a long walk into the country. So Reginald, with myself adhering to the end of his leash, towed me into the country. With unflagging industry he towed me for miles down country lanes, and in occasional pursuit of fowls, and when we finally returned home, Reginald was as fresh as ever, while I was quite exhausted. He entered his pen to try some new barks he had thought out in the meanwhile, while I had a glass of milk out of the cut-glass bottle on the sideboard in the dining room.

After due consideration, I administered a dose of bromide to Reginald stiff enough to convert him into a canine Rip Van Winkle. But whether it was due to some peculiarities of Reginald's nervous system, or whether my previous ideas of the salt as a depressant were exaggerated, the fact remains that the bromide inexplicably produced the much-advertised Kruschen symptoms, and Reginald positively bounded with renewed energy, and began to eat the kennel fittings with good appetite.

To cut a long story short, a few days of bromide and fatiguing walks so improved Reginald's vocal powers that he was transferred to other kennels situated in the middle of a vast open space.

Originally, it appears, the breed was evolved by crossing a wolf with an Alsatian sheepdog. Some of the wolf characteristics still remain. They are suspicious of strangers, but if one is used to handling dogs, their confidence can soon be restored. They are wonderfully intelligent. One dog I visited during a severe bout of distemper showed a great liking for me, but she positively loathed my bag containing the hypodermic syringe. As soon as the bag was opened, she would extend one huge paw and gently close the lid, at the same time looking at me with appealing eyes. However, she submitted to any therapeutic measures I might devise, with exemplary patience, and took any medicine that was offered to her voluntarily. Such a dog deserved to get better, and I am glad to say she has done well in the show ring since.

A short time ago I was called in to see an Alsatian who was stated to have "gone mad" as the result of covering himself with pitch. His owner had locked him in the kitchen, and requested me to take him away. He said the animal would allow nobody to approach him. It

was not safe for any man to go near him, so he had sent for a veterinary surgeon. My smile at the unconscious humor of this speech was taken for assent, and an expectant group of spectators gathered at the window, while the veterinarian, with mingled feelings, entered by the door, just as the ancient gladiators entered the Roman amphitheatre.

Now, I find that to approach any dog with hand extended, at the same time murmuring, "Good doggie," is to court disaster. That is why the man in the street gets bitten. I walked in briskly, ignoring the dog, and earnestly inspected the gas mantle. Then casually I picked up his collar and leash, and he allowed me to slip them on, and returned home with me quite humbly. The audience at the window were disappointed, for there was nothing spectacular. I mention this incident because it is one way, at least, of dealing with a vicious dog and the secret was imparted to me by a wise old veterinary surgeon some years ago. It is a psychological fact that a dog who knows he is dangerous hates to be ignored.—The Veterinary Record.

Loss of Swine After Vaccination

A. T. Kinsley

According to reports, losses of swine after vaccination are occurring quite frequently, at least in some sections of the country. Although potent anti-hog cholera serum and dependable virus have proved efficient in immunizing swine against hog cholera, there are still some skeptics. These losses are unfortunate because they present an opportunity to condemn the value, use and methods of administration of anti-hog cholera serum.

Anti-hog cholera serum is a specific in overcoming or neutralizing the influence of the filtrable virus and is of little value in any other disease. A few have advocated that other diseases such as necrotic enteritis and the pulmonary form of hemorrhagic septicemia were modified forms of hog cholera and recommended the use of anti-hog cholera serum, and although the losses may have been temporarily checked, the serum was not effective, and after repeated trials in such cases its value even in the control of hog cholera was condemned by some swine producers.

After a careful consideration we submit the following as possible causes of the so-called hog cholera vaccination difficulties:

First—Swine not in condition when vaccinated and improper care after vaccination.

Second—Swine in the incubation stage of disease.

Third—Swine that are contaminated with gas producing microbes obtained from contaminated lots.

Fourth—Faulty technic of the vaccinator.

Fifth—Impotent serum.

Sixth—Avirulent virus or virus with diminished virulency.

Seventh—Diseases that occur after the swine are immunized and probably have no relation to the immunization.

The foregoing facts are not necessarily arranged in the order of frequency of occurrence.

THE SUCCESSFUL PRACTITIONER IS ONE THAT MAKES A CAREFUL EXAMINATION OF EVERY HERD OF SWINE PRIOR TO VACCINATION IN ORDER THAT HE MAY KNOW THE EXACT CONDITION OF THE SWINE AT THE TIME THAT SERUM AND VIRUS ARE INTRODUCED. HE WHO DOES NOT MAKE SUCH AN EXAMINATION CAN NOT KNOW THE CONDITION OF THE SWINE AND DIFFICULTIES SUCCEEDING SUCH VACCINATION ARE PRONE TO OCCUR.

Prepare Swine Before Vaccinating

The condition of swine at time of vaccination is a very important factor in determining the success of immunization. The reaction following the injection of serum and virus in hogs that are properly prepared is usually very slight and frequently unobserved. If swine are not properly prepared for the reaction, there may be extensive losses due to hog cholera induced by digestive derangement. Swine are properly prepared for immunization by diminishing the feed three or four days prior to vaccination and withholding all feed for twenty-four hours previous to the vaccination. The best results are obtained by using a slop feed during the period

prior to immunization. Swine should receive a very limited ration for several days after immunization and the ration should consist of slops, skim milk, buttermilk, or other like products. It is very probable that the extraordinary losses that occur in stock pigs are directly due to excessive feeding immediately after immunization.

Herd Should Be Carefully Examined Before Immunizing

An apparently healthy herd may be found to be diseased when a careful examination is made. Some of the most extensive losses have occurred in apparently healthy swine that were given anti-hog cholera serum and virus. The following cases will suffice for illustration:

A Missouri practitioner was called to vaccinate some 60-pound shotes. The shotes were apparently healthy. The practitioner was familiar with the surroundings and assumed that there was no hog cholera or other disease of any importance on the premises, and he assured the owner that there would be no serious effects from the vaccination. This practitioner was surprised on the tenth day after vaccination when the owner of the swine reported ten shotes dead and several others off feed. On examination of several of the dead ones, the usual lesions that are attributed to the filtrable virus were observed, viz: congestion and hemorrhages of various lymph glands, petechial hemorrhages in the lungs, kidney, mucous membrane of the larynx and bladder. In addition to the above, there were extensive lesions of necrotic enteritis consisting of ulcers and an adherent exudate on the intestinal mucosa. Formerly, such findings would be considered positive evidence of a cholera break. Fortunately, the practitioner in this case had vaccinated two other herds of swine in the same community using serum and virus of the same serial number that had been used in the herd in which the losses occurred and on inquiry these herds were found to be in good condition. There is no question but that the loss in this particular herd was in part due to the activity of the filtrable virus and the practitioner was at fault for not having identified the presence of necrotic enteritis when the swine were vaccinated. Swine affected with necrotic enteritis should not be given hog cholera virus.

Hog cholera in the incubation stage may not be recognized by the practitioner unless a careful examination is made in which the practitioner devotes considerable time to actual inspection of the swine and a careful consideration of the history is obtained from the care-taker. Extensive losses may occur as a result of the use of serum and virus in swine in the incubation stage of cholera. In one instance some sixty swine weighing about 100 pounds each were given the simultaneous treatment, and two days after, fifteen of the swine were dead and nearly all of the others showed marked evidence of disease. A careful investigation of this particular herd revealed the fact that the swine were actually sick at the time of vaccination. It is not possible to produce hog cholera in less than four or five days by the use of virus, and in those instances in which cholera develops within three days after vaccination, it is practically positive that the hogs were affected at the time of vaccination.

Contaminated Lots and Swine a Factor

Losses are frequently reported in which there are several deaths in from 24 to 48 hours after the administration of serum and virus, and in which there is more or less extensive gaseous swelling at the point of injection. Many such instances have been investigated, and it has been found that losses due to septic infection at the point of injection is invariably due to filthy pens. Such losses are usually due to malignant edema and can be avoided by keeping the swine in sanitary quarters just prior to and for several days after vaccination.

Careful Technic Necessary

Most practitioners have developed an efficient technic for the administration of anti-hog cholera serum and virus; however, an occasional instance arises in which post-vaccination difficulties can be traced to faulty technic. It is quite essential that syringes be sterile. One small lot of hogs died of anthrax induced by the veterinarian who had neglected to sterilize a syringe that had been used for vaccinating cattle with spore anthrax vaccine. In one other instance, a practitioner had used his virus syringe needle to tap an edematous swelling on a mule and without sterilizing the needle proceeded to immunize eight pure-bred gilts, each of which developed malignant edema at the site of injection of the virus.

Serum and Virus Rarely at Fault

With the present regulations for the production of anti-hog cholera serum, there is little opportunity for any licensed serum establishment marketing an impotent serum. If a virulent virus is used in conjunction with an impotent serum there will be evidence of disease in the swine immunized in from seven to ten days and the diseased animals will be found to be affected with hog cholera.

It is possible that a virus may become attenuated or weakened, particularly during the hot summer months when subjected to a high temperature for several days in transit or before it is used. A weak or avirulent virus when used in simultaneous vaccination fails to produce a reaction and the swine so treated acquire a passive immunity from the action of the serum.

Generally speaking, anti-hog cholera serum and virus are much more constant in potency and virulency and therefore more dependable than is the condition existing in swine when immunized.

Losses May Be Due to Other Diseases

Most any condition may occur in immune swine other than hog cholera breaks. It is not at all unusual to find swine immune to cholera affected with various parasitic disturbances. Such conditions can usually be readily distinguished from hog cholera and should not be reported as hog cholera breaks. Fortunately, the majority of veterinarians now recognize the fact that there are some other diseases affecting swine aside from hog cholera. It is difficult to make a specific diagnosis of swine diseases. The following gives a brief general statement concerning symptoms and lesions of the most important diseases of swine.

Hog Cholera

Usually only a small percentage of the herd is affected in the beginning of an outbreak; a high temperature, inappetence and a tendency to hide in bedding are symptoms indicating hog cholera. Autopsy reveals congested and hemorrhagic lymph glands, petechial hemorrhages of lung, kidney, bladder and epiglottis.

Flu

High temperature, inappetence, tendency to remain in bedding, thumping, coughing and a large portion of the herd simultaneously affected are the usual symptoms of influenza. An acute inflammation of the anterior respiratory tract typifies influenza.

Necrotic Enteritis

Appetite fair to good, diarrhea, unthriftiness, emaciation and temperature 104-105° F., are the usual indications of infectious necrotic enteritis. Enteritis of varying intensity is the lesion that characterizes this disease.

Hemorrhagic Septicemia

Cough, nasal and ocular discharge, thumping, appetite fair and temperature up to 105° F., typify the pulmonary form of hemorrhagic septicemia. A typical catarrhal pneumonia, with or without pleurisy, is the lesion that characterizes this disease.

Swine Erysipelas

Diminished appetite, dullness, temperature 104 to 106; may or may not show locomotory disturbance; sloughing of tail or portion of ears. Autopsy findings reveal very large spleen, tumefied, edematous lymph glands that may or may not evidence necrosis.

Excessive salivation in dogs as a result of medication with oil of chenopodium can be reduced to a minimum by administering the medicament in capsules.

Excessive losses of poultry is frequently due to overcrowding. Fatal parasitism is prone to occur in fowls that are overcrowded. About 400 chickens can be profitably maintained on one acre if proper housing equipment is provided.

Dr. H. L. Mahnken of Marshall, Mo., reported an interesting case of lymphatic leukemia in a cow. This cow was in a herd that was grazing in a good blue grass pasture. All the other cattle were in good condition but this cow was markedly emaciated and weak, although she grazed until a few hours before death. The prescapular and precrural lymph nodes were noticeably enlarged. A careful autopsy revealed enlargement of practically all lymph nodes and particularly those of the abdominal viscera. The enlarged lymph nodes were distinctly encapsulated, soft and compressible and when incised a grayish white viscid fluid escaped. Lymphatic leukemia is distinguished from lymphadenoma or lympho-sarcoma by the blood changes. There is a marked lymphocytosis in lymphatic leukemia. The diagnosis in this case was verified by a laboratory examination.

The relation of mineral constituents in foods to health and normal development has been demonstrated beyond question. It is possible that certain necessary chemic substances are being exhausted by continuous crop production. Thus, it has been found by Errard and Culbertson, that the addition of iodin in the form of potassium iodid to the ration of young growing swine, in dry lot and on rape pasture, resulted in increasing the average daily gain approximately 10 per cent and decreasing the food requirement 10 per cent. It may be found that iodin will also be of value in cattle and sheep feeding.

CASE REPORTS

CALF PNEUMONIA

(Report awarded 2nd prize)

In November, 1922, an outbreak of pneumonia occurred in this vicinity among a number of purebred Holstein calves, the age of the animals ranging between two weeks and two months.

The first calf taken sick was treated with calf scour serum, 50 c.c. intravenously. The animal had probably been sick several days before treatment commenced. It was dead the morning following the injection of the serum.

Treatment given to eight other calves was as follows: Two or three applications of mustard to the sides and a pneumonia jacket made from absorbent cotton and a gunny sack applied over the thorax. If breathing was difficult, the patient was given inhalations of steam medicated with Lugol's solution—this was applied by means of a pail and a heavy sack. Sterilized camphor in oil was injected subcutaneously twice daily in doses of 2 c.c. In some cases this dose was increased to 4 c.c. The following was given by the mouth:

℞

Guaiacol	℥ ii
Glycerin	℥ ii
Tincture zingiberis	℥ i
Aqua q. s. ad	℥ xvi

M.

Sig. Three tablespoonsful every four hours in a little milk.

The sick calves were isolated as soon as they were discovered. They could be picked out more promptly if the temperature of the apparently well ones were taken once daily. All these animals had been treated prophylactically by the injection of hemorrhagic septicemia bacterin, 2 c.c., soon after birth, followed by 4 c.c. in five to seven days as convenient. I have also tried anti-hemorrhagic septicemia serum as a curative measure in this disease but have found no beneficial effect from it.

Another remedy tried has been novarsenobenzol or novarsenobillon, .45 gram in 10 c c. of distilled water, intravenously or intramuscularly, the dose being repeated in about a week if necessary. I understand that this drug is the same as neosalvarsan. I have had some very good results from this remedy, but other cases have been disappointing.

T. B. Harries

Strathmore, Alberta

TEMPERATURE CHART OF CALVES SUFFERING FROM PNEUMONIA

(Record of temperature taken between 8 and 9 a. m., and 5 and 6 p. m.)

Calf No.	Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	A. M.	105.6	103.6	105.2	104.4	104.8	104.6	104.2	103.4	103.0	102.6	102.4	102.0	102.2	Convalescent			
Bull	P. M.	.....	105.2	105.4	104.2	105.4	104.6	104.2	102.4	104.4	102.4	102.2	102.6					
2	A. M.	105.0	104.2	104.0	102.8	103.2	102.4	103.0	102.0									
Heifer	P. M.	.....	103.4	104.2	104.0	103.4	102.8	102.8	102.6	102.6	Convalescent							
3	A. M.	103.2	102.0	103.2	102.4	102.0	102.6	102.4	.....									
Bull	P. M.	.....	103.0	103.0	104.6	103.4	103.4	102.6	103.2	102.2	Convalescent							
4	A. M.	102.6	102.6	102.8	104.0	105.2	103.0	103.2	105.2	102.0	103.2	102.4	102.0					
Bull	P. M.	102.8	104.0	104.6	106.0	104.2	105.0	103.8	103.2	102 6	102.6	102.2	102.2	Convalescent				
5	A. M.	104.0	104.6	105.4	104.8	103.6	103.6	103.6	103.8	103.6	103.0	102 6	102.4	102.8	104.2	103.6	102.4	101.6
Heifer	P. M.	105.0	106.0	105.2	103.2	104.4	104.0	103.6	103.6	103.0	103.0	102.2	102.6	102.6	103.2	102.2	103.2	Convales
6	A. M.	104.0	102.6	104.0	103.0	103.6	102.0	102.0	102.0									
Heifer	P. M.	104.6	103.6	102.6	102.2	102.6	102.6	102.6	102.4	Convalescent								
7	A. M.	102.2	102.6	103.2	102.6	103.2	102.4	102.0	102.0	102.8	102.4	102.2						
Bull	P. M.	102.8	102.2	103.0	104.2	103.2	103.0	102.6	102.0	103.0	102.8	102.2	Convalescent					
8	A. M.	105.0	104.2	104.2	103.2	103.6	103.0	105.2	103.2	103.4	103.0	103.2	103.4	102.6	102.4			
Heifer	P. M.	105.2	104.0	104.0	103.6	103.4	103.4	104.0	103.4	103.0	104.0	103.4	103.6	103.6	Convalescent			

A pair of foxes on a fox ranch at Seward, Alaska. From photo obtained by Dr. A. T. Kinsley on his trip last summer.

POISONING SUSPECTED IN A COW

The following case and necropsy are presented because I do not understand certain of the pathological changes, and the description may serve to bring out the observations of others along similar lines.

A six-year-old grade Guernsey of excellent type and good condition, was unloaded after a two-day shipment in a car with nineteen other head. She walked out of the car with considerable difficulty and went down in the yard after exhibiting symptoms of incoordination. She was never able to stand again. The saliva drooled from the mouth and there was twitching of certain muscles over the sides. She appeared to be in great pain; no elevation of temperature; heart fast; eight months pregnant. The weather was exceptionally hot.

I suspected lead poisoning in this cow and therefore administered an antidote along with other drugs that seemed indicated. We built a canvas tent over the patient and tried to make her as comfortable as possible. Her pain continued and even became worse. There were no passages from the bowels in the thirty-six hours that she lived after being unloaded. She bruised herself considerably during this period because of her struggles.

On autopsy I found a number of surface bruises because of the animal's movements while down. The lungs were congested throughout and rather black, the right being more affected than the left. The animal lay on the right side. There was fibrous tissue along the edges of the ribs on the inside of the thorax, and fibrous tissue over the peritoneal surface of the rumen in spots. These spots were irregular and varied in size from one-eighth to five- eighths inch in diameter. There was the same fibrous tissue in spots over the peritoneal surface of the abomasum, also on the face of the spleen. There were irregular, gray-black specks over the surface (peritoneal) of the rumen, independent of the fibrous spots. These specks were quite regular in size but irregular in arrangement, one-thirty-second inch in diameter and possibly two or three to the square inch. I found this condition also on the omentum. The kidneys, bladder, uterus and fetus were apparently normal.

The peritoneal surface of the small intestines was of a dark gray color. The large intestines were nearer normal. The stomachs and intestines were rather empty throughout. The contents of the small intestines were of a red-brown color and of the consistency of cream. The mucous surface had a mucous exudate containing very fine black spots, the size of a pin-point, just as thick as they could be placed. These spots came off with the exudate when touched with the knife. The contents of the abomasum were red-brown in color and very liquid. The inner surface of the rumen appeared normal, but the mucous surface scraped off easily as if necrotic. The mucous surface of the large intestines was congested. The inside of the mouth was of a gray color, no ulcers, with the tongue deeply congested.

No chemical examination was made of the intestinal contents, but it seems to me that this was a case of poisoning. None of the other cows in the car were taken ill. What I should particularly like to have explained is what caused those little black spots in the mucous lining of the small intestines. It appeared to be an exudate from the mucous surface for it could be scraped off with the knife. Also what were those small specks on the peritoneal surface of the rumen and on the omentum?

A. L. Smith

Mechanicville, N. Y.

POSSIBLY FORAGE POISONING

I was called to see a two-year-old Jersey heifer, the property of a farmer living a couple of miles in the country. The animal had been pastured with some other cattle in an old orchard in which there was wheat, crabgrass and orchard grass with some wind fallen apples and pears.

The owner informed me that this heifer had been sick for two or three days before he called me, that he had tried all the home remedies he knew of without success, that he did not think there was any chance of saving the animal, but that she was too valuable to let her die without doing all for her that could be done.

I found the patient was blind, down and unable to rise without assistance, temperature 102°, respiration slow and deep, ears drooping, head drawn back toward the left shoulder. I was told she had not taken any water or feed for two days.

I injected 80 cc. botulinus antitoxin in the jugular vein and 10 c.c. sterile camphorated oil deeply into the caput muscles. I then gave three quarts of water as a drench being careful not to strangle the patient. In about six hours, I called again and found the animal much improved, and she was able to get on her feet without assistance. I then injected one-fourth grain nitroglycerin subcutaneously, guided her to the water trough where she drank some water, after which she was left for the night.

The next morning I found that her eyesight had returned and she had full control of her legs and neck. I gave three-fourths pound of sodium sulphate and two drams of fluid extract of ginger in a quart of water as a drench.

This was all the treatment given. The heifer made a rapid recovery and now looks and acts as well as she did before her sickness.

A. E. Orr

Siloam Springs, Ark.

MILK FEVER AND PNEUMONIA

I am practicing in the locality where I was born and where many of the people have seen me grow up and blossom out as a veterinarian. As frequently is the case, I am by some regarded as the boy I used to be and not as a veterinary practitioner of about thirty years of age. The owner of the animal in the case I am about to relate, has whenever necessary had me at his farm or lumber camps to treat various cases, and this I have always done with good results. However, he has thought it necessary to give the diagnosis, for which I was supposed to prescribe. Of course, my treatment has always been in line with my own diagnosis, and only in instances where our opinions coincided has my treatment agreed with his view of the malady.

An early morning call took me out of bed to his farm, and on arrival I found a little more assistance than usual was to be had, as both the diagnosis and treatment were immediately thrust upon me. A cow was supposed simply to have been fed too much the previous day and because of that was suspected of being constipated. A pail of soapy water was handed to me and I was told to give this as an enema. I maneuvered about slowly getting ready for this act, constantly observing the cow and by roundabout inquiry got further information on the case. I learned that the cow had calved three weeks previously, had decreased in her milk flow over night, there was no bowel movement, temperature slightly below normal, extremities cold, and a telltale haze in the eyes. There was no question in my mind but that I had before me a latent case of milk fever of the mild type. It would not do to doubt my client's diagnosis without getting into an argument, so I thought to be a little cocky, I would give the enema as requested, take a chance on the cow lasting until evening, and then come back and do a little performing.

On returning in the evening, I found as I had expected that the cow had had no further bowel movement, the skin was still cold, rumination absent; in fact, the animal was the same as I left her in the morning. A great deal of excitement took place over the fact that the cow had not urinated during the day. I also learned that she had been given a dose of Epsom salts and a few hours later at the advice of a neighbor, a quantity of melted lard. That satisfied and horrified me, so I decided that my delayed performance should take place.

I inflated the udder, then coaxed the family into the house, where we had lunch and swapped yarns for fully two hours. We then returned to the barn, where we found the cow standing up and eating hay. She had urinated and in all respects seemed well on the road to recovery. The owner did not have anything further to say about his diagnosis of constipation, but I made a few wise cracks about the enema and then proceeded on home.

The next evening I drove by the place and was hailed by the farmer to come and see his cow. I found her breathing heavily, she had a fever, and on auscultation over the lungs, I heard those "damned" rales. These recalled to my mind the Epsom salts and the melted lard. It was quite a job for me to tell the owner that the cow now had pneumonia due to the drenching and that I expected her to die. The animal died three days later. My demonstration was unsatisfactory. Constipation persisted until the last, so in the owner's mind that is what the cow died of. I think I will leave the magic art to Houdini.

J. E. Thompson

Ely, Minn.

HYDROPS AMNII

On September 4th I received a call to see a cow, which the owner said was about to freshen. I found a one and one-half year old grade Holstein bloated and looking as if she might fall and die any moment. The owner wanted me to tap the animal and "let off the gas." I asked him how long the cow had been in this condition. He said about a week and that she seemed to be getting worse. I told him there would be no use to "tap her" as I thought the condition was due to fluid in the uterus.

On examination I found the uterus full to the brim and overflowing, so I siphoned off twenty-five gallons and still left some. Then I proceeded to remove the fetus, which was dead and badly swollen and had to be removed in parts.

After treatment consisted of stimulants with nux vomica, also three hypodermic injections

of camphorated oil. The cow made a good recovery.

I have been in practice over thirty years, but this was the first case I ever encountered where there was so much fluid in the uterus. I should like to have any comments or criticisms from other practitioners as to the method of treatment.

R. Kerr, D. V. S.

Kaukauna, Wis.

VETERINARY SCIENCE ASSERTION AND PRACTICE

Under this heading in the September issue of Veterinary Medicine appeared an article by Henry Gray, M. R. C. V. S., taken from the Veterinary Record. It is interesting and amusing to note that Dr. Gray falls into the very error that he criticizes in the first part of his paper when he claims pituitary solution has no power to stimulate contraction of uterine muscular tissue. Properly prepared pituitary solution in proper dosage will always produce contraction of uterine muscles. This is not a "claim" but a positive fact that can be definitely demonstrated by kymographic records in any well equipped laboratory. The degree of stimulation varies with circumstances. Clinical results are also overwhelming evidence that pituitary solution stimulates uterine muscle contraction, Dr. Gray's claim to the contrary notwithstanding. Pituitary solution will also increase blood pressure; this is a fact, not a claim. Pituitary solution is an invaluable agent in obstetrical work and is used successfully in every hospital of importance.

N. S. Mayo

The Abbott Laboratories, Chicago

THE USE OF LOBELIN IN FORAGE POISONING

I wish to make a few remarks in regard to the fine report on lobelin sulphate by Dr. Browning in the September issue of Veterinary Medicine. My experiences with lobelin have been very pleasing. It is one of two things without which I could not practice—the other is my stomach tube. I should like to make one report of the use of the alkaloid which may prove of interest to others.

During the early winter months of 1922 in this locality we had quite a lot of forage poisoning from moldy corn. The symptoms varied from nervous spasms to complete prostration, which could easily be mistaken for milk fever. In fact, I know of one case where a veterinarian was called to see a cow and administered the air treatment. He was called back the same day and found the herd bull in the same condition as the cow.

In the first few cases I treated, I used purgatives and intestinal antiseptics and was having fair success, but quite frequently I encountered a patient that would have a second attack in about twenty-four hours, and she invariably died in nervous convulsions.

For some reason or other I decided to use lobelin on a cow that had been down for forty-eight hours with no apparent change in her condition. I gave one-quarter grain doses every four hours, leaving my hypodermic syringe for the owner to administer treatment during my absence. In less than twelve hours the cow was up and apparently normal in every respect. From this time on, I used lobelin on every case and did not lose a single animal, nor was there a second attack in any case.

O. C. Shockley

New Ross, Ind.

ECLAMPSIA IN A COW

On September 3rd I was called to Watts, Okla., to see a four-year-old grade Holstein cow that had been on pasture in a field of sweet clover. It had been about ten months since she had freshened and she had been giving about two and a half gallons of milk a day.

The owner's attention was attracted to the animal when she failed to give the usual amount of milk at the morning milking. She was again turned to pasture and allowed to stay there until milking time that evening when she was brought to the stable. The cow looked as if she had not eaten anything all day, being gaunt with ears drooping, staggering walk and no milk. The owner gave a pound of Epsom salts in water as a drench, then called the county agent to his assistance. When the agent arrived, he told the farmer to call a veterinarian as he was not acquainted with the diseases and treatment of cattle.

When I arrived, I found the patient down, unable to get up and very restless with temperature 102 and respiration accelerated. My treatment consisted of the subcutaneous injection of one-half grain atropin sulphate and one-twentieth grain lobelin sulphate and inflation of the udder. The patient soon became quiet and in a couple of hours got on her feet, passed a large amount of highly colored urine, drank a pail of water and began to eat some hay. I then injected 5 c.c. hemorrhagic septicemia aggressin and gave a

four-dram dose of fluid extract of gelsemium in a drench, leaving another dose to be given in six hours, telling the owner to let the air out of the udder and report to me in the morning.

The morning report came in saying the cow was eating, drank water and seemed all right.

A. E. Orr

Siloam Springs, Ark.

A FEW INTERESTING CASES

July 31, 1923. I was sent out to a farm over fifty miles away by the prosecuting attorney to perform a postmortem examination on a horse that was suspected of having been maliciously poisoned. I arrived in the middle of the afternoon. The horse had been dead since midnight and was greatly bloated. I should have let out the gases with the trocar, but instead I cut through the skin and abdominal muscles. Bang! The large intestines exploded. The shock almost knocked me over and my eyes were so full of the intestinal contents that it took nearly half an hour before I could resume operations, and my eyes were sore for the rest of the day. I found the stomach walls ruptured from impaction. Of course, the owners, an old lady and her grown daughter, were not satisfied, for they had worked up a splendid case on circumstantial evidence against their former hired man. In the first place, he had been fired a few days previously and had threatened to get even with them. About 10 o'clock the night before, they had heard a car pass the farm and also thought they heard it stop opposite the barn on the road. About 11 o'clock they heard an awful tearing around in the barn and went out to investigate. They found the horse suffering with intense abdominal pain and gasping for breath. A few minutes later the animal died. So there seemed to be no doubt but that the horse had been maliciously poisoned by the former hired man. They were not satisfied with my findings, so in order to humor them, I took the horse's stomach along for chemical analysis of its contents, but after I explained things to the prosecuting attorney, he decided that no chemical analysis was necessary.

July 17, 1924. Subject: young mule. History: the animal kept getting thinner although receiving good feed. Symptoms: temperature 101° F.; pulse 50; no peristaltic movements on left side; conjunctivae normal; respiration normal. The teeth were in good order. I could find nothing to account for the slight rise in temperature until I made a rectal examination. On the left side I could palpate a large tumorous growth, which as far as I could make out, was larger than my head. No treatment was attempted. Necropsy revealed a fatty tumor weighing thirty pounds.

June 3, 1925. Subject: gelding. History: the owner stated that the horse had been well until that morning, when he began to show symptoms of colic. Symptoms: rapid respiration; pulse 60, normal in frequency and strong; temperature 102° F. Rectal examination revealed a rupture of the rectal wall large enough to insert my hand through with ease. This rupture was located about one foot from the anus. Through the rupture fecal matter had fallen into the abdominal cavity until it appeared full of feces. Destruction was advised. The owner did not kill the horse, but it died before morning. I cannot understand what caused the rupture nor why the pulse remained strong and normal until the last stages.

Dec. 15, 1924. Subject: five-year-old saddle pony. History was that the animal did not do well. Symptoms: the patient was very emaciated and so weak it could hardly walk; temperature 102°.5. Both lower fourth molars were decayed. I could not pull them, so I trephined. I asked $15.00 for the operation, but the owner decided he would rather give me the horse, so we settled for $10.00. The pony started to pick up in a few weeks, and in the spring of 1925 was sold for $90.00—a very good return on an investment of $10.00 and three months' feed.

Feb. 7, 1925. Subject: cow of mixed breed. History: fresh the previous day; would not clean; appetite poor. Symptoms: temperature 99° F.; one quarter of the udder inflamed. Treatment: udder inflation; manual removal of placenta; massage of the inflamed udder. The temperature rose to 102°.5 in one and one-half hours. The cow recovered.

May 23, 1925. The same cow was down and almost unconscious, very restless and in much pain; temperature 99° F. I gave one-fifth grain lobelin sulphate which quieted her. Diagnosis: milk fever from over-eating. Treatment: udder inflation, rectal injections, hypodermic cathartics. The cow appeared better during the rest of the day and got up towards evening. The next day, however, she appeared all in, with respirations rapid, pulse almost imperceptible, temperature 102° F., ears cold, eyes glassy. I advised destruction, to which the owner reluctantly agreed after he had asked some of the neighbors whether they thought the other veterinarian in town could save her. Necropsy showed abscess formation on the large intes-

tines, about three feet from the rectum. The walls were several times their normal thickness. According to the neighbors, this cow had been subject to spells of indigestion. The owner had paid $125.00 for her during the fall of 1924 and had bought her for a five-year-old. All her incisors, however, on the lower jaw were gone, so evidently she was a very old five-year-old.

May 7, 1925. Subject, a 24-year-old saddle pony, a family pet. This animal suffered occasionally from indigestion and was brought to the hospital for treatment. Temperature 96° F. During rectal examination, the walls of the rectum ruptured but not through all layers. There was quite a profuse bleeding. I advised the owner that the pony would probably not recover this time. However, to my surprise, the animal got well.

May 7, 1925. Subject: farm horse. History showed the animal had been running on pasture where mustard and pepper grass were very abundant. The horse was not in much pain, but rectal examination revealed impaction of the rectum. I tried to break up and remove the impacted material as much as possible, but it was so hard that removal was extremely slow work. After several hours' work, I had removed everything within reach, but I could still palpate several feet of hard fecal matter. I gave rectal injections of warm soap suds, one gallon of mineral oil internally, large doses of nux vomica and one-half grain arecalin. The next day I returned and expected to find the fecal matter softened, but instead I found it as hard as before. I repeated the same treatment as given on the previous day and gave this time two gallons of mineral oil by the stomach tube and eight gallons of warm water. I also instructed the owner to continue the rectal injections. However, the horse died. The owner made a postmortem examination and found eight feet of the posterior intestines full of the impacted mass. This is the first case of the kind that I have failed to cure. The only thing I am sorry for is that I did not try to connect the hose to the water faucet as this would have given more force, and one could have kept it running all day.

July 19, 1925. Subject, pointer. History indicated the animal appeared constipated and wanted to lick its anus. I inserted one finger into the rectum and found two pieces of sharp bones that could not get by the sphincter muscles. I removed the bones and the dog had no further trouble.

O. W. Johnson, D. V. M.
Davenport, Wash.

ATONY OF THE RUMEN

This condition is quite common among cattle in the early fall due to the animals getting into cornfields or apple orchards.

I was called by telephone on Sunday, September 20th, the client stating that he had a cow down unable to rise and badly bloated. I found the cow as stated, lying in a partly recumbent position with the hind legs extended backwards wide apart. The animal was in a semi-comatose condition with the rumen greatly distended. The patient was moved into a more comfortable position. On palpation the rumen had a doughy, gaseous feeling; pulse nil.

Two grains of strychnin were given hypodermically and the usual preparation made for a rumenotomy operation, viz: clipping, shaving and disinfecting. An incision, one inch long, was made through the skin and muscles, Crumback's impaction trocar inserted and the cannula removed. A small volume of gas with a large quantity of fermented food escaped. The owner and myself now started a churning and kneading motion over both sides of the animal's body, which kept a continuous stream of food and gas shooting from the trocar.

While working, the owner told me that on the previous night the cow had broken into the cornfield and gorged herself, after which she came to the barn and drank a quantity of water. The owner had given the usual treatment, viz: two pounds of Epsom salts and a bottle of Rawleigh's bloat cure. He said the cow was put in the barn and she gave very little milk. In the morning the animal was lying down, had great difficulty in rising, was very staggering when moving, feces very thin and watery and not voided in any great quantity. The owner had then given more bloat cure, after which he and his family went to church. On arrival from church, he found the cow down, unable to rise and very much bloated. A neighbor who was a "handy man" was called in and tapped the cow but could get very little gas to escape. This history was told to me by the owner while we were working over the patient.

We kept up the kneading and churning motion for one hour. Also a wire rake was passed through the trocar and about three gallons of undigested and fermented food removed. At this time the animal was breathing easier, and the pulse could be felt although it was very feeble. A hypodermic injection of camphorated oil, two ounces, was given, also two tablets consisting of the following:

℞

Barium chlorid	grs. xxi
Tartar emetic	grs. xviii
Strychnin	grs. ½
Aqua q. s.	O i

The cow was now lying well up on her sternum. The bladder was very distended, and on catheterization a large quantity of very highly colored urine was passed. The trocar was to be left in until all fermentation had ceased. The client was told to keep up the kneading process.

The following medicine was left to be given in two doses, four hours apart:

℞

Spirits ammonia aromatic	ʒ iv
Spirits ether nit.	
Tincture nux vomica aa	ʒ ii
Aqua q. s.	O i

I did not hear from the client until the next day, when his daughter returned the trocar and stated the cow was up and looked quite normal. The client was advised over the telephone to cleanse the wound and smear with tar dressing. I saw the client on September 24th, when he paid me and stated the cow was all right and giving nearly her usual flow of milk.

This mode of treatment has been very successful in my practice, some seemingly hopeless cases recovering, although the animals were in a comatose condition from auto-intoxication.

P. K. Walters, V. S.

Thorndale, Ontario

TO OVERCOME POST-OPERATIVE HEMORRHAGE IN CASTRATION

Dr. Wintringham's article on page 429 of the September issue of Veterinary Medicine is interesting. Like many others, I had trouble with post-operative hemorrhage in colt castration and have overcome it in the following way.

Proceed with your castration in your own favorite way, but when you come to the tunica vaginalis, cut a hole just large enough to allow the testicle to escape. Then pull the testicle out through the opening and pull the cord out as far as you generally do. Then apply the emasculator over the cord, tunic, cremaster muscle and all. Aim to go as high up on the tunic as possible. It will take a little elbow grease to bring the handles of the emasculator together.

I do not remember of being called back for post-castration hemorrhage since I adopted this method more than fifteen years ago. The procedure is simple and removes all loose tissue from the inside of the scrotum, and if the openings through the skin are adequate, there is small danger of swelling.

Henry Hell

Wilton Junction, Iowa

TETANUS IN A MARE

(Report awarded 4th prize)

On April 21st an interesting case of tetanus came under my observation. The client, a farmer, called and said he had a Clyde mare that was very stiff and had peculiar looking eyes that seemed to roll backwards at times, and he wanted me to go out and see her.

On arrival at the farm, I found a fine Clyde mare due to foal in one month's time. She had typical symptoms of tetanus; temperature 102° F., pulse 55 per minute and strong. She was very stiff when moved and had a rigid look when standing. The membrana nictitans was drawn tight. She was able to eat slowly and was in fair condition.

Inquiry into the history for a wound of any kind brought out the information that the mare had caulked herself about ten days before while hauling some wood, but she had never gone lame. I examined this wound which was practically healed and opened it up well, applying tincture of iodin.

I administered a physic bolus (aloes, calomel and ginger), gave 1500 units of tetanus antitoxin subcutaneously, also carbolic acid, 30 grains, glycerin and water, one ounce, subcutaneously. I had the patient placed in a well ventilated box stall, had the stall well bedded and warned the owner to be very careful not to excite the mare as she needed quiet. She had a pail of water containing magnesium sulphate placed in the box of the manger so she could drink at any time. Feed consisted of alfalfa hay and bran mashes. My prognosis was guarded as I did not know how the case would terminate as the animal was so far advanced in pregnancy.

On April 22nd the patient seemed much the same, except a little more excitable. She was eating slowly but managed to clean up her bran mashes. I gave another dose of tetanus antitoxin, 1500 units, subcutaneously, also 30 grains of carbolic acid, and one ounce of glycerin and water subcutaneously the same as before, and applied tincture of iodin to the wound.

On April 23rd I gave another 1500 units of tetanus antitoxin but did not give the carbolic acid subcutaneously as the animal was too nervous, and I did not want to excite her too much. So I left 30 grains of carbolic acid and two

drams of fluid extract of belladonna to be given on the feed morning and night.

On April 25th I saw the patient again, and she seemed to be doing very well. Also on April 28th and 30th she was gradually improving. The muscles were not so tense and she was eating a little better, and I was hopeful of a recovery.

On May 6th I called the owner by telephone to find out how the mare was progressing. He said she was doing well and eating fairly good. So I was greatly surprised to have him call the next day at noon and say he guessed he had spoken too soon, as the mare was down and could not get up and he thought she was about all in. I immediately went out to see her, taking slings along and wondering what had happened, thinking that probably she would be foaling.

I found the patient down and unable to rise, as the owner had said. She was almost covered with sweat. She was lying on the right side, but with help we rolled her over on the left side, when she was able to get up without assistance. The temperature was 101.5° F., pulse 60 per minute, breathing accelerated, with slight tympany. She was very uneasy, would paw and want to lie down again, but was still pretty stiff.

I ordered warm water, washed my arm in creolin solution, also washed the vulva of the mare and made a vaginal examination. The os uteri was closed, so I diagnosed the trouble as indigestion from alfalfa. I gave arecalin hydrobromid, ½ grain, and lobelin sulphate, 1/10 grain, subcutaneously. I also gave powdered nux vomica, 2 drams, powdered gentian, 2 drams, and ammonium carbonate, 2 drams, as a drench; then salicylic acid, 4 drams, in capsule.

I saw the mare the next day, and she was over the attack of indigestion. From then on, she made an uneventful recovery. She foaled on May 27th, and the colt is a good one.

This was a very interesting case to me as I had never before seen tetanus in a mare so late in pregnancy. Also it was somewhat unusual to note the indigestion caused from the alfalfa hay when the patient was eating better. Likewise she recovered without the large doses of tetanus antitoxin.

In this particular case the wound was easy to find, while in others where one cannot get the history of any injury, it is almost impossible to find a wound or nail prick.

The carbolic acid was given as it has a tendency to relax the tension of the muscles and inhibits the growth of tetanus bacilli. Belladonna was given for its antispasmodic and anodyne effect.

E. S. Brown, B. V. Sc.

New Dundee, Ontario

AZOTURIA

After returning from church on a Sunday night, I was called out twelve miles to see a sick mare. On arriving at the farm, I was informed that the mare was some distance farther on. Inquiring about the trouble, I was informed that the mare had been in pound for a month. They went to take her home and found that she had gained very much in flesh, which is very unusual in a pound. They proceeded to take her home, and after riding her about two miles, she went down on the road. Of course, I knew what I had to treat when they told me the animal was down. They had tried to get her in at some of the farmers along the road, but they were afraid she had some disease that their horses might contract so would not take her in.

She was loaded on a stone boat and drawn seven miles home. I met them about three miles from home and administered chloral hydrate, one and one-half ounces in solution, to keep the animal on the stone boat. I also gave a hypodermic injection of lobelin sulphate, one-tenth grain, digitalin, one-fourth grain, and turpentine, two ounces, in a pint of linseed oil. The patient was catheterized, the urine being very dark and thick.

After getting the patient home, we placed her on a good bed of dry straw and gave a pint and a half of linseed oil. I left some sodium bicarbonate powders, one to be given the first thing in the morning. I also left a cathartic and told them to draw off the animal's urine as soon as they got up in the morning, also to give a drink of water with the chill off, but nothing to eat.

We then proceeded to the house where there was a nice lunch ready for us, and after doing justice to the lunch, I left for home, saying I would return the next day.

The next day I found the mare improving and looking for something to eat, which, of course, was withheld until the following day, and then only half a sheaf of oats was to be given. Before leaving I catheterized the patient again, and the urine looked more normal at this time. I gave arecalin, one grain, lobelin sulphate, one-fourth grain, and strychnin sulphate, one-half grain. The sodium bicarbonate powders were to be given four times a day and all the water allowed that the mare would drink,

with the chill taken off. Also the urine was to be drawn every four hours if the patient would not urinate herself.

This mare got up on Tuesday afternoon and made a good recovery. She was turned over every five hours as long as she was down. This is the farthest I have known a horse to be drawn on a stone boat and recover.

J. M. Fawcett

Regina, Saskatchewan

ACUTE INDIGESTION WITH COMPLICATIONS

On September Ist I received a call from the fairgrounds of Wapello, Iowa, to treat a sick horse, a six-year-old gelding, a pacer. I made a diagnosis of acute indigestion with complications. For two hours the animal would not be quiet long enough for me to take the pulse or temperature, while the spasms occurred continually.

I should have preferred to have used the stomach tube but do not think I could have controlled the patient long enough to make this method practical. At first I gave four tablets in a capsule of the following:

Tincture ginger	M 20
Tincture capsicum	M 40
Camphor	grs. 10
Salicylic acid	grs. 20

In half an hour I gave one ounce Turcapsol, composed of camphor, 20 grains, salicylic acid, 15 grains, turpentine, 120 minims, in a special preparation of capsicum and ginger. All medicine was given in capsules as it was dangerous to drench while the spasmodic attacks occurred.

Treatment was omitted for one-half hour while the animal was kept from lying down. I do not like to see a horse roll with such violent spasms as the intestines are likely to become dislodged.

One hour after commencing treatment, after the patient had received the anti-flatus tablets and Turcapsol alternately, I gave two ounces of a colic remedy composed of the following:

Alcohol	70%
Cannabis indica	grs. 90
Chloroform	grs. 60
Ether	grs. 19-1/2
Ethereal oil	gr. 1/5
Ethyl nitrite	grs. 1-4/5
Physostigma	grs. 30
Sp. turpentine	grs. 30
Camphor	grs. 7-1/2
Capsicum	grs. 7-1/2
Oil peppermint	q. s.

Treatment was omitted for another half hour, then changed to one ounce Thymogen, a powerful non-poisonous antiseptic. Having at this time been under treatment for two hours and showing continued spasms, the patient was again given one ounce of Turcapsol alternately with the colic remedy.

At the end of the third hour after commencing treatment, enough improvement was noticed so that I thought it safe to give one-half grain of arecalin subcutaneously. I find when giving arecalin, if the violent pains are first modified, the drug works very nicely, which it did in this case.

This animal had continued spasms from 11:30 a. m. until 3 p. m. The reason I think it beneficial to report on the case is that my treatment may be criticized, and that is where we can learn and benefit from our mistakes.

On the evening of the same day, September 1st, examination showed the respiration 15, pulse 50, temperature 103.5° and a deep bronchial cough with much yellowish mucous secretion. For the cough I gave guaiacol compound in moderate doses every three hours during the night, also a stimulant composed of—

Strychnin sulphate	grs. viii
Tincture strophantus	℥ iss
Alcohol q. s. ad	℥ viii

Of this I gave every three hours three-fourths of an ounce in ten ounces of water for twelve hours. After twelve hours I gave it with the cough medicine every four hours.

On the evening of the first day, at eight o'clock, the horse ate his usual amount of hay and one pint of oats with a small amount of moist wheat bran. On the morning of the second day he ate about two quarts of oats and bran mixed and the usual amount of hay. The mucous secretion and the cough were subsiding. The pulse was 38, temperature 101.5°, respiration 15.

On September 3rd at 2 p. m., the owner insisted strongly on entering the horse in the 2:15 pace, to which I objected but finally consented, disclaiming any responsibility. The horse paced the first heat well, winning third, and at this time when the animal was cooling 20 minutes, I gave him one-half ounce of the stimulant. He went the second heat and won second, when I begged the owner to go easy, which he said he tried to do. The horse won third in the third heat. The owner was glad to get the money and more so to save the life of the horse. One week later at Columbus Junction, Iowa, this

horse won first in three successive heats on a bad one-half mile track.

J. F. Abel, M. D. C.

Wapello, Iowa

SURGICAL TREATMENT OF PROLAPSED RECTUM

On February 3, 1918, I received a call from a colored gentleman to see a sick horse. It was about 20 degrees below zero and a big snow on the ground, so I was compelled to drive a team. On arrival I found a three-year-old gelding in quite poor flesh and condition generally with prolapse of the rectum, about fourteen inches protruding and frozen very hard.

The history of the case was that the owner had about a dozen such horses just running out in a timber pasture and he was feeding them hay in a pole rack. That morning he had found this colt down with his head fast under the bottom pole and with the rectum prolapsed. I made a careful examination and advised that I would try to replace the parts, but due to their being so badly frozen, I was afraid to give a prognosis.

First I took a ten-yard roll of bandage and bandaged the tail so as to keep all hair from irritating the parts. After being so bandaged, the tail was pulled to one side and held there by a loop around the neck. I then proceeded to draw the frost by applications of cold water. After the parts were all pliable and movable, I thoroughly cleansed them with a solution of liquor cresolis compositus and carefully replaced them without much trouble and seemingly with no inconvenience to the horse. As soon as the rectum was in place, the horse started eating and apparently had no pain whatever. I stayed about half an hour, during which time the animal made no effort to evert the rectum nor showed any evidence of discomfort of any kind. Having another bad case waiting, I concluded to go, advising the owner to keep me posted on the progress of the case and especially to let me know if there was another prolapse.

I heard no more from the owner until between nine and ten o'clock that night, at which time he called and said that the horse's rectum was again prolapsed and he couldn't get it back any more. On questioning, I found he had replaced it several times during the day. I told him that on account of the severe cold I would wait until morning, thinking to myself that the horse would be dead by that time. However, he was not, and the owner wanted me to come out and do something.

On arrival the morning of the 4th, I found the horse's rectum protruding a little farther than on the previous morning. It was terribly swollen and very much discolored, in fact, almost black. But as yet the horse showed no signs of distress. I examined the parts and concluded I couldn't replace such a large mass and cause it to be retained, so I advised amputation, which would probably prove fatal, but the owner insisted that something be done, so I decided to amputate.

The horse was cast and secured. I gave no heed to the protruded parts whatever but thoroughly cleansed my hands and arms, threaded a fairly large needle with braided silk and proceeded by placing my left hand inside the rectum and suturing from outside in, placing a row of continuous sutures completely around the anus from the outside and securely fastened them. Then with a sharp scalpel, I incised the protruded rectum close up to the anus and threw it away. The horse was released at once, and to my surprise as soon as he got to his feet, he started eating as unconcerned as though nothing had happened, and according to the owner, never missed a feed after that, making a complete recovery in a short time.

G. W. Rail, D. V. M.

Rippey, Iowa

PARALYSIS OF THE FACIAL NERVE IN A MULE

Please give me some information on this case. Mule, six years of age, big and fine, with paralysis, at least partial, of the lips and he has not much use of the end of the tongue. The muscles along the outer surface of the molars are so relaxed that the feed finds lodgment on the outer surface of the molars. The mule can grind feed very well but can only handle one straw of hay at a time as the lips hang low and flabby. The animal tries to eat most of the time but is getting very thin. The mule has been in this condition three weeks. It was caused as a result of the animal lunging and jerking while being led some distance along a public road where there was much motor traffic. A rope halter was used and it was a damp day. —F. G.

Reply: Paralysis of the facial nerve is fairly common in cattle as the result of injury in the dehorning chute. Such a condition has been seen in a horse from wearing a yoke. One can

hardly understand how a rope could get in a position to do this injury. Prognosis in such cases is good, recovery, however, requiring from six to 12 weeks, sometimes longer. Treatment consists in devising a food that the animal can eat and means of getting it into him. Practitioners usually apply a blister over the nerve or at least at the point where it crosses the neck of the inferior maxilla, where the injury presumably occurred. Probably this has more effect on the owner than it has on the course of recovery.

RUPTURE OF THE COLON IN A MARE

About nine o'clock in the evening of April 18th, I received a call from a client five miles distant, asking me to come out and see a sick mare. I started immediately, was soon at the farm, and finding no one at the barn, went to the house where the owner was playing the mandolin. This owner was careful about his horses, so I felt that his mare could not be very sick when he was in such a musical mood.

When we got to the barn, I was brought before a bay mare, eight years old, weighing about 1350 pounds. The outstanding symptom that struck my eye was the great depression. As I proceeded with my examination, I obtained the following history.

The mare worked on a seeder with two others all day, She ate her feed and drank water at noon as usual. The weather was cool. None of the horses sweated much. Nothing unusual was noticed except a little before six, the mare seemed to get somewhat lazy. When she was unhitched she would not drink, and when put into her stall she would not eat but stood back in a droopy manner.

As I examined the mare, I found an imperceptible pulse, so I got the heart beats at the chest, which were 120 per minute and very weak but regular. The temperature was 104° F., and the respiration was a little labored but was not so markedly disturbed. Otherwise, the mare was quiet. Her hair was dry and from its smoothness, it was evident that she had not suffered from overwork.

When I had finished the preliminary examination, I told the owner that if the mare's heart would not improve by stimulation, she would not live until morning. In my own mind, I believed that death was not far off, and I gave such mild stimulants as could do no harm. I kept close watch and observed that the temperature was gradually rising and the depression becoming more marked.

During the first thirty minutes I examined the animal, she seemed to present a picture of severe shock. I tried to reason and search for the possible cause. By a process of elimination I reached the conclusion that there was a rupture somewhere in the stomach or in the intestines. I told the owner to be careful for the mare might fall on him. The way he acted it seemed he must have thought "That d——— fool doesn't know what he is talking about."

I will admit that one not trained would not think the mare so seriously sick as to be in immediate danger of death. I told the owner I believed there was a rupture of the stomach or of an intestine. I asked him for a pan of water and some soap and made a rectal examination. Palpating through the rectum, I could feel a grating sensation between the peritoneal surfaces of the intestines. I advised the owner then that there was a rupture and in a few hours the mare would be dead. She already showed symptoms of collapse. In less than two hours she dropped dead with only a slight struggle.

The body was then stretched out and laid flat on its right side. An incision was made on the median line of the abdomen through the skin and muscles, being very careful so that no visceral organ was injured. Next I cut the ribs on the back of the left side and along the chest wall in such a way that like a lid the whole side could be exposed without disturbing any of the visceral organs. On opening it was evident to anyone that there was a rupture as small particles of food or feces could be seen in the peritoneal cavity.

I began to search for the rupture by starting with the esophagus, stomach and intestines. All was normal until a short distance from the beginning of the floating colon, in the right dorsal colon, at a place coming in contact with the right flank, there was a round hole or rupture about three-fourths of an inch in diameter. The edges immediately around the circular rupture were ragged for not any greater distance than one-fourth of an inch. Otherwise, the intestine looked perfectly normal.

The only theory I can advance for this rupture is that some time previous, when the intestine was well filled and against the right flank, by a kick or severe thrust, this small area of intestine was bruised to the extent that during normal peristaltic movements it gave way.

In conclusion, I will say, do not make a positive diagnosis unless you are absolutely cer-

tain. If you are certain, a positive diagnosis, proved to the owner by a careful postmortem demonstration, increases one's prestige.

S. P. Holtz, D. V. M.

West Point, Ia.

RUPTURE OF THE DIAPHRAGM

On April 29th, as it was raining and the night seemed to be getting unusually bad, I was called to attend a horse some twelve miles away that had been suffering from colic since morning. On arrival I found a black gelding, weighing about 1700 pounds, lying peacefully in a stall. I made him rise, and on examination found the respiration 40, temperature 103° F., pulse 55. As is my custom when examining a gelding, I never complete my examination until I am sure I have not a scrotal hernia to deal with. After making sure of this, I allowed the horse to lie down again, which he was very anxious to do. When down he would immediately stretch out as if to rest. On auscultation I could not detect any intestinal sounds.

Before I decided what the real cause of the horse's illness was, I gave a stimulative treatment for colic with a physic ball, which in thirty minutes made the animal very uneasy. He would get up and attempt to lie down, getting on his knees, then up before going down. This was kept up for half an hour. Then audible action could easily be distinguished in the patient's bowels. Then he was quiet for a time, lying in a natural position.

My diagnosis was some obscure obstruction of the bowels caused by exertion such as pulling or jerking while in harness. I left a few doses of tincture of nux vomica to be given every hour and gave instructions to call me in the morning, which the owner did, stating the horse seemed just a little more uneasy, had commenced to breathe short and was sweating profusely. I told him that it was only a question of a few hours, at the longest two hours, before the horse would die and to get him out of the barn. I was due in Kalamazoo to attend a veterinary meeting, so I advised the owner to let me hold an autopsy the following morning.

Autopsy showed the large intestines highly inflamed and filled with gas. The small intestines were inflamed and very dark. The diaphragm had a ragged edged opening large enough to admit my two fists, through which had telescoped about ten feet of the small intestines which had become strangulated.

The history of this case was that the animal had worked in a three-horse team the day before, had been fed as usual that night and in the morning ate as usual, but after the morning feed was found sick. Could this rupture of the diaphragm have occurred from the work, or did it occur when the animal was full of feed in an effort to get up or down?

Wesley D. McCoy

Cassopolis, Mich.

FATAL PULMONARY INJURY IN POLO PONY

A seven-year-old, cream colored gelding, weight about nine hundred pounds, evidently castrated as a five-year-old, in good flesh, free from blemishes and a very excellent type of modern polo pony, had been roaded overland about seventy-five miles into Ft. Worth, Texas. The physical condition of the animal at that time was claimed by the attendant to be O. K., and the horse was full of life and very active. With eleven other polo ponies, this animal was loaded into an American Railway Express Company's car one Sunday evening at Ft. Worth and routed through St. Louis, Mo., consigned to Roslyn, Staten Island, N. Y.

This yellow pony refused feed and water all day Tuesday and arrived at Pittsburgh, Pa., at six p. m., when I was called to attend the patient. A young Texan was the attendant in charge of the car and horses and volunteered his opinion that the animal was suffering with pneumonia. This attendant had applied camphorated oil over the chest walls and around the throat of the horse.

Examination revealed much pulmonary distress and groaning at frequent intervals, much suffering, rapid pulse, respirations short and painful, marked pleuritic ridge, tucked up and tense abdominal walls, slight watery discharge from the nostrils, pawing occasionally with one front foot, then lying down for several minutes, then rising and remaining up about double that time.

My diagnosis was traumatic injury of the right chest wall and pleura and possibly the right lung from some unknown cause.

The prognosis was very unfavorable.

Treatment consisted of anodynes and sedatives. Some improvement was noted. The animal drank several quarts of cold water and appeared slightly relieved. He was unloaded, removed to the company's stables and placed in a comfortable stall.

I was called hastily at five a. m., when I found the conditions aggravated and much

worse. I was called again at ten a. m., and saw the patient die.

Necropsy at 11:30 a. m. the same day revealed eleven subcutaneous intercostal and pleural punctures, about the size of a man's index finger. Seven extended through the pulmonary pleura and about an inch into the lung substance, with hemorrhage and clottings within the chest cavity. There was considerable serum on the right side only.

The animal was valued at $300, and transportation expenses were about $100. It was my opinion that the injuries were inflicted by a wheelless spur wielded vigorously and viciously by an infuriated or mentally deranged rider, or perhaps by careless and inhumane men using ox goads, heavy hickory canes or small pike poles in loading these horses, when possibly this particular one became unruly and seemed unmanageable. The young Texan attendant stated I would not have been able to examine the animal by my particular methods if the horse had been in good health. I examined the other eleven ponies for evidences of any injuries or sickness, but they were all in good condition and a very choice collection of superior polo ponies.

James A. Waugh

Pittsburgh, Pa.

PARAPLEGIA IN A DOG

A high-class and pedigreed Doberman Pincher male dog, aged thirteen months, had been ailing for some time and was under the treatment of two of our best small animal specialists in the city. An oestopath and a chiropractor also had exhausted their skill without avail.

The condition exhibited by the patient was paralysis of the posterior parts of the body. The appetite was fairly good and regular; digestive and urinary organs functioning normally; pulse, respiration and facial expression satisfactory.

History showed the dog had been ailing about two months with no signs of improvement under all these treatments.

My prognosis was favorable, with plenty of time and an unlimited diet, comfortable and warm quarters, as this was winter time.

Treatment consisted of the administration of Abbott's triple arsenates with nuclein thrice daily, hypodermic and intramuscular injections of strychnin solution every fifth day, massage and bristle brushing twice daily, the application twice daily of electricity by means of a small battery such as used by M. D.'s, and later a series of gymnastic movements.

Recovery was complete and satisfactory in about a hundred days.

James A. Waugh

Pittsburgh, Pa.

ESOPHAGEAL CHOKE

I was recently called to see a choked horse. On arrival at the farm at 11 p. m., I found the patient to be an eight-year-old gray gelding. He was very much distressed, and it was very evident that he was sure enough choked. He was surrounded by the usual bunch of sympathetic but helpless neighbors. They had run the victim up and down a steep hill until he was nearly exhausted but had failed to dislodge the choke in that way. The offending substance, which consisted of a good sized wad of partly masticated sheaf oats, seemed to be located about half way down the neck.

I applied the mouth speculum and passed the stomach tube through the mouth until I could feel the obstruction, and being unable to push it any farther, I elevated the end of the tube and with the aid of a funnel, poured about four ounces of oil into the tube and allowed it to gravitate down around the obstruction. I then withdrew the tube and gave one-half grain of arecalin hypodermically.

I sat on an old sled and enjoyed the beautiful moonlight summer night and talked with the crowd for about one and a half hours, when I went back to the patient and found the saliva running from his mouth and his breathing somewhat improved. I again passed the tube in the same way as before, and when it came in contact with the oats, by a little pressure, I was able to push the wad on into the stomach. I could readily tell when it went into the stomach by a little gas escaping from the tube. The patient then drank water and went to grazing on the hillside. All that was necessary for me was to gather and clean up my instruments, collect my fee and proceed home, leaving a much relieved patient and a satisfied client behind.

I was once taught that through the nostril was the proper way to pass the stomach tube, but I have not found it so in all cases in practice. I regard the stomach tube as our most useful instrument in dealing with chokes when used with discretion. In an article on chokes in the July issue of Veterinary Medicine by O. V. C. '94, he does not mention the stomach tube, but he sounds a very timely warning about a rabid animal presenting symptoms of choke. I can testify to the danger of this procedure from an experience I had when a boy trying to

get a supposed bone out of the throat of a rabid dog that was believed to be choked. The fact that I am still walking up and down and to and fro over the earth is conclusive evidence that I did not get bitten. Since that time, I have learned a few tricks, one of which is never to run up and grab hold of an animal until I have first looked him over.

Rembrandt Morgan

Winfield, W. Va.

SEQUESTRUM IN A COLT

In the spring of 1924 I was called to see a two-year-old colt that had been out in timber pasture during a bad storm a night or two before I was called. The owner said, "A tree must have fallen on him." To say the least, the colt was badly bruised, with several skin abrasions and a large puncture wound on the left side extending anteriorly from the sixteenth rib about nine inches, in close proximity to the ribs.

I first thoroughly cleansed the wound with antiseptics and then made a careful search with a probe for the presence of any foreign body in the wound but found nothing of that nature. There being considerable swelling present, I was unable to determine by palpation whether there was a fracture of a rib or not. I packed the cavity with gauze saturated with bichlorid solution and gave orders to remove the packing after twenty-four hours and cleanse the wound once daily with bichlorid solution. I also left a can of healing powder to be dusted over the wound and administered a prophylactic dose of tetanus antitoxin. The owner agreed to call me in case the colt needed any more attention.

Not hearing anything more about it, I supposed all was well, until late in the fall when I received a call from another client to treat a cow, and as I was about to leave, he said, "I've got a colt with a running sore on his side that I can't heal with anything—if you have a minute's time, I wish you would examine it." I told him I would and to show me the colt. As he drove the animal up, I recognized it at once as the one I had treated that spring.

I cleansed the wound and inserted a probe about four inches, when I struck a hard object. I shaved an area above the object and disinfected the skin with tincture of iodin. I then applied a twitch and side-line and with a probe-pointed bistoury opened the duct sufficient to grasp the object with forceps and dissected it out. It was a piece of bone, three inches long and about one-half inch wide, tapering to a point. The wound was sutured and packed with gauze saturated with tincture of iodin. The packing was removed the following day, and the wound was cleansed daily with antiseptic solution. In about two weeks, the wound was entirely healed.

F. C. Dieckman

Farmersburg, Ia.

REMOVING A WART WITH FORMALDEHYD

(Report awarded 1st prize)

One day a client brought a dog to me with a large wart on the antero-medial metatarsal region midway between the tarsus and digits. The wart was of the same size and shape as a good sized hen's egg. Closer inspection revealed two more smaller warts an inch lower down, one medial and the other posterior. The entire metatarsal region and tarsus were enlarged to almost twice their normal size. The dog held the leg up, very seldom even touching it to the ground. The gluteal muscles showed marked atrophy, and the animal was in poor condition with very little appetite.

The animal was a very finely bred pointer, two years old, and when a pup was the hope of its owner in winning the sweepstakes field trials, when the largest wart put in its appearance. The owner had the wart removed twice, once by surgery and again by caustics, only to have it return and become larger than before. The owner had given the dog to my client on the condition that if he failed to effect a cure he would destroy the animal. With this history the patient presented a rather belated spectacle.

I decided to remove the warts with formaldehyd and proceeded as follows: The animal was put under general anesthesia, although I believe now that local anesthesia would probably have been sufficient. A plug was removed from the middle of the large wart with a trephine down to where the tissues began to get hard. A pledget of cotton saturated with forty per cent U. S. P. formaldehyd was packed in the cavity, taking care that there was no overflow of the solution as the cotton was packed into the cavity. A pledget of cotton saturated in a similar solution was placed over the surface of the wart, using extreme care not to let it come in contact with the surrounding skin. Cotton saturated in the same solution was placed over the two remaining smaller warts, the leg bandaged, and a muzzle placed on the dog.

In five days the bandage was removed. The wart was black and hard. Around the edges the formaldehyd had penetrated the healthy tissues about one-eighth inch, and there was a

marked ring around the wart where it was coming loose from the surrounding healthy tissue. The wart was grasped by vulsellum forceps, and with the aid of a scalpel, which had to be used only in a few places, the wart was removed, leaving a cavity a little larger than the original rim of the wart and over which were the prettiest granulations I ever saw on any wound. The smaller warts were removed in the same manner and presented the same appearance.

The muzzle was removed from the dog, and he was left to take care of his own wounds, having a grassy yard in which to run and a good clean bed at night. The dog's appetite improved immediately, and in ten days he would put weight on the leg. Recovery was very rapid. It has now been ten months since the operation, and the dog's leg has practically returned to normal, except for a slight scar, hardly noticeable, at the site of the largest wart.

I have used formaldehyd in removing sitfasts and shoe boils and have had equally successful results. Its advantages are that it converts what would be a rather bloody operation into one practically bloodless; it penetrates into the healthy tissue slightly beyond that which it is desired to remove; the prettiest granulations I have ever seen have been beneath diseased tissues penetrated with formaldehyd; and lastly is the rapidity with which the wound heals.

M. W. Emmel

Wilson, Ark.

ETHYL CHLORID ANESTHESIA FATAL TO DOG

The following case may be of some interest to readers of Veterinary Medicine. During the week, a friend asked me if I would amputate the tail of his dog. Although an operation of very short duration, he desired me to use an anesthetic.

Of course, chloroform and ether are the anesthetics generally used in veterinary practice, but I resorted to ethyl chlorid (kelene), considering that the operation would occupy only a few seconds. This was the first occasion on which I had given the drug, and it is the last, although it is an anesthetic used a great deal in a city hospital to which I was attached as pathologist. The drug is frequently given by the closed method using an inhaler but is also given on a mask, and the latter is the procedure I adopted. The anesthetic was given from a fresh graduated bottle containing 40 cc.

It took only a short time (two minutes) and 4 cc. of the ethyl chlorid to put the dog unconscious, the operation being very much shorter. It was here that the animal's respirations ceased, but the heart continued to beat for fully three minutes later. Artificial respiration and two drops of hydrocyanic acid failed to bring my patient back to consciousness.

The dog was a healthy mongrel, three months old, and free from respiratory or circulatory defect; the existence of such conditions being eliminated previously.

Having spoken to several medical practitioners regarding this case, I am informed that a great deal of diversity of opinion exists towards this drug when given as an anesthetic, especially by the open method.

Various veterinary writers give little attention to ethyl chlorid, saying it is a drug the expense of which precludes its use in veterinary practice. I myself would go further and say that it is a drug that when given as an open general anesthetic is exceedingly dangerous.

This is my first experience of its use, and I do not intend to use it again, but will still adhere to chloroform for all classes of patients. I willingly invite any suggestions or criticisms of this report, as this case represents a pitfall that nobody ever wishes to meet again.

William M. Nielsen

Newcastle, Australia

SLOUGHING OF TONGUE A SEQUEL OF CANINE DISTEMPER

Last August a client brought a pit bull pup to me suffering with distemper. I gave it subcutaneously 10 cc. of canine distemper serum (Mulford) at three-day intervals, giving three doses in all. I also prescribed Guiacamphodine No. 1 (DeVine), one pill three time a day. The dog was put on a light diet of raw eggs and milk and got over the distemper nicely.

Two or three days later, his owner brought the same dog back as the animal had developed a pronounced case of "sore mouth." As the owner was unable to afford expensive treatment, I gave her a sixteen-ounce bottle of potassium permanganate, 1-1000 solution, and intestinal antiseptic No. 1 (Abbott's), telling her to wash the dog's mouth twice a day with the permanganate solution and to give the intestinal antiseptic pills three times a day. The animal was again put on a light diet of raw eggs and milk, and the owner told to keep fresh, cold water before the patient at all times.

Ten days afterwards the animal was again brought to my hospital, and his owner stated the dog was losing his tongue. I opened the dog's mouth, and sure enough half of the tongue had sloughed off. I have treated many

dogs with sore mouth, but this was the first case I ever saw where the tongue had sloughed. The gums had apparently healed, but the end of the tongue that was left had a dirty yellowish membrane on it. I washed the mouth with a strong potassium permanganate solution and swabbed the end of the tongue with tincture of iodin.

The young lady who owned the dog seemed very much alarmed and said the animal could not drink anything. I told her to feed him small pieces of raw meat. The mouth was washed and the tongue swabbed with tincture of iodin for two more successive days, and the false membrane disappeared, whereupon the dog was discharged as cured.

Quite recently the owner showed me the dog, and the animal was in a much better condition. He had gained weight and had plenty of pep. The owner told me the dog had learned to drink by putting his muzzle into the dish of milk or water and sucking the fluid into the mouth.

H. C. Groff

Cushing, Okla.

INTRACRANIAL HEMORRHAGE IN A DOG CAUSED BY ARTIFICIAL VOMITING

There are in intracranial hemorrhage, like in a good many other diseases or conditions, a predisposing or inherited cause and an exciting cause. The former resides in the animal's system, and the latter comes from outside. In this case I attribute the condition to an exciting cause.

A police dog, one and one-half years old, was suffering from a heavy, rough cough for about a week. On the advice of a family M. D., there was administered to the animal an emetic consisting of two tablespoonsful of powdered mustard mixed with milk in order to "clear out the throat." This is a well known remedy in human medicine in acute cases of croup of children, where an emetic is used to clear out the pseudomembrane covering the larynx. The remedy did the work well in this dog, causing a violent vomiting for about half an hour. Then resulted a sudden complete collapse and a total paralysis.

My diagnosis was intracranial hemorrhage. No treatment was given, and after five hours the dog died.

Postmortem examination substantiated the diagnosis; namely, that a rupture of a cerebral vessel had taken place, as a clot of blood was found at the base of the brain between the dura mater and the cranium. This caused a pressure on the brain, bringing about collapse, paralysis and death.

J. Serling, D. V. M.

Bronx, N. Y.

ARTERIOSCLEROSIS IN A DOG

(Report awarded 3rd prize)

Recently a case came under my observation which interested me, and because of its unusual nature, I have decided to submit a report of it to the profession as a stimulus toward more work along this line. The history of the case is as follows:

A pointer, male, worked two seasons in the field with no evidence of disability. Two months ago he began to show slight difficulty in respiration, especially after exertion.

The condition became more marked, and the animal was admitted to the hospital, June 21, 1925. He remained quiet for the whole day, but when his owner visited him, he became excited and showed evidence of air hunger and a definite spasticity of the forelegs. The following morning he was allowed to run for exercise and another attack came on. This time the spasticity was so marked that it appeared almost like a tetanus spasm, but this disease, of course, could easily be ruled out by the history. A diagnosis of myocarditis and gastritis was made. The usual treatment was given, but the dog died in a spasm the following morning.

Postmortem examination revealed the following: The liver was greatly increased in size and extended far below the costal margin. The appendix was not diseased. The spleen was slightly increased in size and rather soft. The mucous membranes of the small and large intestines were extremely irritated and showed round areas about the size of a dime, which appeared as early spots of ulceration. The lungs were of an extremely pale pink color, almost white, and contained practically no blood. The heart was greatly increased in size. Dark red clotted and fluid blood filled the right chambers of the heart, but the left chambers were entirely empty. The heart stopped in diastole. The right ventricle was extremely dilated, and the pectinate muscles appeared flattened. The myocardium was extremely soft and flabby. The valves of the heart were negative. The orifice of the anterior coronary artery was patent, but that of the posterior was practically occluded by yellowish plaques. This, of course, is the cause of the pathology found. The intima of the ascending and descending aorta contained small raised yellowish white plaques of sclerosis. The kidneys were large

and soft and the approximated edges appeared rolled due to the swollen condition. The tubule stood out prominently and the blood vessels were wide and gaping. The liver was soft and sectioned surfaces revealed the nutmeg appearance of chronic passive congestion.

Pathologic diagnosis:

1. Senile arteriosclerosis with occlusion of the posterior coronary artery orifice.
2. Acute dilatation of the heart.
3. Chronic passive congestion of the liver.
4. Arteriosclerotic nephritis.
5. Acute gastritis.
6. Anemia of the lungs.

I should like to hear from anyone who has encountered a similar case.

G. R. Stewart

Spokane, Wash.

LIQUOR AMMONII ANISATUS IN SHOCK AND HEART FAILURE

A Scottish Terrier, one and one-half years old, came in contact with a running automobile and was thrown three feet into the air and eight to ten feet across the street. The animal was picked up in the street in an unconscious condition and brought to my office.

Examination showed total unconsciousness; breathing very low, 5 to 8 times a minute; no pulse action; the beating of the heart could be recognized only by the use of the stethoscope, about 18-20 a minute; there was no movement whatever of the body. No fracture of bones could be found.

The case was diagnosed as shock and failure of heart action.

Treatment at first consisted of hypodermic injections of strychnin, digitalis and spirits of camphor, but these measures were without avail.

Then I recalled that ammonia preparations stimulate the trifacial nerve, increase blood tension by reflex action on the vasomotor center and prevent syncope, stimulate the heart and circulation, increase the functional activity of the spinal cord. So I took refuge in this drug in order to save the animal.

I used liquor ammonii anisatus (anetho 1, ammonia water 5, alcohol 24), twenty drops every five to ten minutes by the mouth. After fifteen minutes (three doses) the animal raised its head. After three quarters of an hour it was able to stand up, and after another half hour was able to run around the room. By the next morning the patient had entirely recovered.

J. Serling

Bronx, N. Y.

WORMS IN A PUPPY

A few days ago a neighbor asked me to come and see what ailed their Boston Bull puppy. I found the puppy in a fit of pain, vomiting bloody fluid, also passing bloody feces, then howling and whining. The dog had seemed all right the day before and had been playful, but it was in a bad way now.

I made a careful examination and asked questions of the owner, but got little information except that the puppy must be mad. Examination revealed the abdomen filled with fluid making it sound like a water bag. A diagnosis was made of internal rupture due possibly to worms, as I had previously noticed that the puppy passed worms.

The owner wanted me to do what I could, so having nothing else for worms, I gave part of a swine vermifuge capsule with a dose of castor oil. At noon the next day the puppy seemed better and had passed a few worms. I still gave a guarded prognosis. That evening the puppy died, and necropsy revealed the stomach and about three inches of the duodenum perforated as if they were porous knit. There was also about a pint of milk, water and worms in the abdominal cavity. We measured the worms and had a big cupful, some one-fourth inch up to seven inches long.

Student, Ontario Veterinary College

HYPNOTICS FOR SMALL ANIMALS

With the marked increase in small animal practice there has been a demand for a non-narcotic hypnotic and sedative that could be easily and safely administered to small animals.

One of the safest and best "all round" hypnotics and sedatives is barbital known chemically as diethyl barbituric acid. Barbital is best given orally in tablet, powder or as elixir barbital sodium. The elixir contains 20 grains of barbital sodium (sodium diethyl barbaturate) to the ounce.

Barbital is relatively insoluble and can be administered only orally. Barbital-sodium, however, is readily soluble and may be given subcutaneously or peritoneally.

Barbital is a hypnotic and sedative. Following a medicinal dose the animal becomes quiet and soon drops off in a profound sleep and will sleep for hours, or even days depending of course on the amount of barbital given. There are no depressing after effects.

Barbital is particularly indicated in excitable nervous conditions such as the so-called "fright disease" or "running fits." For dogs that bark and create disturbance when brought to the

hospital it gives excellent results. As a preliminary to general anesthesia particularly in cats, barbital-sodium is excellent. Barbital-sodium being soluble can be given in milk that the cat will lap up. When the cat is sound asleep the general anesthetic can be administered.

A number of small animal practitioners perform minor surgical operations under the hypnosis induced by full doses of barbital. When given for this purpose the barbital is best given about twelve hours before the operation is begun. The dosage of barbital for small animals ranges from five grains for small animals to twenty grains for large dogs. The dosage indicated will usually put the animal to sleep for eight hours.

The barbital is usually administered in tablet form or as the elixir barbital sodium. Where quick action is desired barbital sodium should be dissolved in sterile distilled water and injected subcutaneously or intraperitoneally.

N. S. Mayo
The Abbott Laboratories, Chicago

COUGH IN A DOG

I have an eight months old pointer puppy that developed a cough about six weeks ago. He is in rather poor flesh, although he has improved somewhat since I got him. He has no sign of a goiter, has had no distemper that I know of, and was immunized against distemper about two months ago. He has been wormed thoroughly. He seems to cough mostly when he starts to play or gets excited. I am using an electuary containing dilute hydrocyanic acid, ammonium chlorid, lobelia, blood root, squill, licorice and aromatics. This has been used only for a few days. There has been no improvement. Could it be possible that the vaccination against distemper brought on this condition? Is it likely to be permanent and affect his wind?—P. F. S.

Reply: Probably the cause of the cough mentioned is enlarged or diseased tonsils. If such be the case, very likely their removal will be the only effective treatment. If the cough is not due to enlarged tonsils, it is suggested that you use about 1/50th grain of potassium dichromate powdered and dropped on the tongue every fifteen minutes until ten doses have been given, repeating the treatment the next day if necessary. This is quite effective in allaying unproductive coughs in dogs, the kind that perpetuates itself from the irritation occasioned by the act of coughing. You can perhaps get the dichromate in tablets of 1/100th of a grain. If so, you can powder two of these tablets between the thumb and finger and drop them on the patient's tongue.

MOLD POISONING IN HOGS

Four years ago from last July, I vaccinated a herd of purebred Poland China shotes. They weighed on an average about seventy pounds each and were in the pink of condition. There had been no sickness among swine on this farm for several years. I had previously wormed these pigs twice during the summer.

About two weeks after I had vaccinated them, the owner informed me that they had cholera and two of them had died. Thinking there was a so-called "break," I called the serum company. They at once sent two men, one of national reputation. On arriving at the farm, we saw a sight to make any one sick—a typical clinical picture of cholera. The pigs were all lying around on their bellies in out of the way places and if made to get up, would stagger. Some were scarcely able to walk at all.

All three of us were pretty shaky about it, but on postmortem examination, we found we were not dealing with cholera. The blood was like water, only slightly yellow, and all of the tissues of the body were icteric, the worst I have ever seen. The gall bladder was full of a semi-solid substance but more yellow than the natural color of bile. There was not a single worm in any that we examined, and there were no lesions other than a marked icterus.

We felt somewhat better to find that the hogs did not have cholera. But what was the matter with them? We were all at a loss to know. The men from the serum company took some of the blood and the viscera of one pig back to the laboratory. They called me late that night and informed me they could not find anything to which to ascribe the malady. We thought of chemical poisoning, brine poisoning and poisonous plants but in turn eliminated each of these conditions. We sent one pig to the veterinary department of the state agricultural college. Unfortunately this pig had two or three ascarides, and the men at the school diagnosed the condition as bile poisoning from stoppage of the bile duct by the worms. Of course, that could not be the cause as we had held autopsy on several of the pigs that showed the same lesions and were absolutely free from worms.

The pigs were all constipated and showed a great thirst. Not knowing what else to do and in order to do something to pacify the owner, I administered about four ounces of Epsom salts in water to each animal. They drank it readily.

The salts produced a good purgation, and most of the pigs recovered.

I think I have found out now what ailed them. These pigs were turned out in oat and clover stubble shortly after they had been vaccinated, and I think there is a mold that comes on oat stubble that will poison hogs and sheep. I believe that was the trouble. What do some of the rest of you think?

J. R. Hockenbury, D. V. M.
Chicago, Ill.

"THAT GOOD OLD WHITE LOTION"

"There is nothing so powerful as truth, and often nothing so strange."

One bitter cold, snowy and stormy morning, "we" (we cannot say "I" for did not Dr. Hadley almost rule that out?) received a call in person from a talkative farmer friend of nervous-sanguine-bilious temperament, who had ridden twelve miles to get some medicine.

He hurriedly stated that very early that morning on looking out toward the front gate he saw his largest and best mare fully alive but not struggling, standing half in and half outside the front yard with the sharp gate post sticking out of her back.

It is needless to mention that there was great commotion in that big household about that time. Such shoutin', such yellin', such cussin,' such chawin' terbacker! The housewife fainted. But the mare did not seem much put out by the situation.

The men soon decided to saw the post through about half way up to the mare, then step her up and the post would drop out, which it did. Before the sawing commenced, however, the head of the household started for my office post haste, and believe me, he is some rider. He did not want me to make a visit for he thought in all probability the mare would be dead before I could arrive. He also thought he would be prepared in case the animal was alive when he got home.

After hurriedly telling me a little about the case, he said, "Doctor, I want four or five quarts of that good old white lotion in long-necked whiskey bottles, so if the mare is alive I can just pour the lotion down through the hole in her back." Did he say whiskey bottles? Ah, yes, yes! Those were the golden days.

In a week or so I heard that the mare was getting along well, and she finally recovered completely with only the above treatment. The post had entered only the skin on a level with the stifle, passing up under the skin and out above and just in front of the ilium, sticking clean and clear above the skin several inches. The post was sharp and six inches in diameter.

H. O. Ward, V. S.

LICE INFESTATION OF SHEEP

Location.—Lice live on the skin of sheep, crawling about on the wool or hair from place to place and clinging to the wool fibers or hairs in feeding. The sucking body louse (Hæmatopinus ovillus) is commonly found in colonies on various parts of the body, including the face. The foot louse (Linognathus pedalis) is usually found on the lower portions of the legs, below the true wool and in the short, coarse hair. The biting louse (Trichodectes ovis) occurs on various parts of the body.

Appearance.—The sucking body louse has a head somewhat longer than the thorax. The abdominal segments bear two rows of long hairs. The male is 2.1 millimeters (about one-twelfth of an inch) long and the female is 2.8 mm. (about one-tenth of an inch) long. There is an inconspicuous eye on each side of the head. The wool in the region attacked by this louse is usually discolored and contains numerous brown particles, the fecal deposits of the lice.

The foot louse has a short head, as wide as it is long, which merges into the thorax, with reddish oblique bands on each side. No eyes are present. The abdominal segments bear two rows of hairs, of which those at the lateral margin are longer than the others. The female is 2.2 mm. (about one-twelfth of an inch) long and 1 mm. (one-twenty-fifth of an inch) wide; the male is broader and flatter. This is a sucking louse like the preceding species.

The biting louse has a head that is wider than long, with a broad, round anterior end. The abdominal segments show a median dark line and have only a single row of hairs. The male is 1.4 mm. (about one-twentieth of an inch) long and the female is 1.6 mm. long.

Life history.—The eggs of the various species of sheep lice are attached to the hair or wool in the sites customarily infested by the adult lice. The eggs of the sucking lice are said to hatch in 10 to 18 days; those of the biting lice in 5 to 8 days ordinarily, or 10 days in cold weather. Available evidence indicates that the young lice become mature and begin laying eggs in the course of about two weeks after hatching. The sucking lice, as the name implies, are bloodsuckers. The biting lice feed on the epithelial scales and other material on the surface of the skin. Lice usually cause little trouble in summer, but become more numerous and annoying in winter.

Distribution.—Biting lice are rather common in the United States. The sucking body louse is fairly common on sheep in the Southwest. The foot louse has been found on sheep in various parts of the country.

Symptoms and lesions.—Lice, whether biting lice or sucking lice, cause itching and irritation. This of itself interferes with nutrition, and affected animals fail to fatten or keep in condition as they should. Moreover, the itching leads to scratching, with a resultant loss of wool, and this scratching adds more time lost from feeding to that lost from discomfort. Scratching may also cause cuts and bruises. The loss of nervous energy and the interference with feeding and nutrition tend to stunt the growth of young animals, interfere with the fattening of the entire flock, and predispose to other diseases by lowering the vitality. Actual lesions in the form of sores are caused where numerous biting lice cluster. The sucking lice abstract blood and lymph in considerable quantities where the lice are numerous. Finally, the excreta of the lice soil the wool, sometimes to a considerable extent; this is particularly true of the sucking body louse.

Lice are readily found on infested animals by examining them carefully, preferably in direct sunlight.

Treatment.—Where sheep are infested with biting lice only, sodium fluorid may be applied in the form of a powder to get rid of them, a single application sufficing for this purpose. The powder is rubbed into the skin at a number of places so as to insure a good distribution. It is of no value against sucking lice. Sodium fluorid should not be applied to mucous membranes, such as those of the mouth and anus.

For sucking lice it is necessary to use a contact poison, and these poisons are also satisfactory for biting lice. In cold weather, where dipping is inadvisable, insect powders, composed largely of pyrethrum and naphthalene, may be used as a control measure and will serve to control the lice, but are not satisfactory in eradicating them.

For dipping, the substances which have been found effective in field tests are coal-tar creosote, cresol, arsenical dip, and 0.07 per cent nicotin solution with 2 per cent flowers of sulphur. To eradicate lice it is usually necessary to dip at least twice, with an interval of 14 to 16 days between dippings, in order to kill the lice that hatch out after dipping, since these dips can not be depended upon to kill all the eggs or "nits." Spraying is generally unsatisfactory as a method of applying dips to sheep, as it is too difficult to wet the wool

Sheep should be handled carefully, not roughly. Dip the bucks, ewes, and lambs separately. The sheep should be fed and watered from 3 to 6 hours before dipping, in order that they may not be hungry or thirsty and yet not gorged with food. In hot weather they should be cooled off before dipping, and when the nights are cold they should be dipped in time to dry off before night. Ten days should elapse after shearing before dipping, in order that cuts may heal, especially when arsenical dips are used. Because of their extremely poisonous nature it is usually inadvisable to use arsenical dips in treating sheep.

Prevention.—To prevent infestation with lice it is essential that contact with lousy animals be prevented and that animals free from lice be kept out of sheds, pens, inclosures, or pastures where lousy stock has been present within three weeks. After the first dipping, sheep should be put on clean pastures or held in clean inclosures to allow time for any eggs to hatch and the lice to die, or else the sheds and lots should be thoroughly cleaned out and disinfected before using them. For this sort of disinfection the coal-tar dips in double the strength used for dipping are satisfactory.—M. C. Hall, U. S. Dept. of Agr., Bul. 1330.

SPAYING A BITCH

I have a client who owns a three-year-old pointer bitch that he wants spayed. I have had no experience with this operation on bitches of this age. She has just been in heat. How long after this period should I wait? Is it proper to remove the uterus with the ovaries at this age?—P. S.

Reply: It is best to wait at the least three weeks after all symptoms of estrum have disappeared before spaying, and a month is even better. Where the operation is performed while the congestion is still present in the genitals, the animal sometimes shows an extreme lassitude, even paresis for weeks, although they usually recover spontaneously from this. Further, both shock and hemorrhage are greater when spaying is done during the period of estrum than when performed during the quiescent stage. Nothing useful is accomplished by removing the uterus, and it unnecessarily increases the magnitude of the operation. Simply remove the ovaries completely, controlling the hemorrhage, and you have accomplished every desirable purpose that the desexing operation can accomplish.

EAR MITES IN CATS

On page 118 of Saunders' "Rabbit and Cat Diseases," the following prescription is given for use on cats infested with ear mites:

Beta-naphthol	3 i
Ether	3 iii
Olive oil	3 ii

I used it with the result that the cats died. I fear there is too much naphthol in the prescription.—R. A. C.

Reply: The prescription for ear mites is just as the author uses it, and one is inclined to think that your patients died from some other cause. Fright is not infrequently the cause of death in cats treated in a veterinary hospital. Nostalgia is sometimes a contributing factor. However, the latest treatment for ear mites is much simpler, and to judge from reports, more effective and safer. It consists of a few drops of kerosene or ordinary coal oil dropped into the ear after the removal of the wax plug, if the meatus be plugged with wax. After leaving the oil in the canal for a minute or so, drain it out with cotton, and to prevent injury to the skin, do not permit it to run over the outside surface. This treatment is said to be harmless, painless and effective.

PARASITE OF RABBIT FOUND IN CATS

In August, 1922, while practicing at Boonton, N. J., I was one day called by telephone to Mountain Lakes, N. J., an adjacent town, by a very much excited lady who said, "My cat has a large worm in its neck, and I think it is choking her."

Shortly afterwards I was examining a female tiger cat and found it to have imbedded subcutaneously in the region of the trachea a parasite the like of which I had never before seen in the cat, but which I had often previously found in the necks of cottontail rabbits I had shot.

The parasite was removed by incising the skin of the neck and squeezing out from behind, and the quite large, gaping hole in the cat's neck was then swabbed with tincture of iodin.

Being anxious to know just who and what this rabbit parasite that adopted the cat as his host was, I sent it to Veterinary Medicine for identification, giving a short history of the case.

In a short time a very clear letter arrived from Dr. M. C. Hall, in which he said "The specimen in question is a larva of one of the bot-flies belonging to the family Oestridae and belongs in the genus Cuterebra."

The letter went on to explain that this particular larva usually had as its host members of either the Rodentia (rodents) or the Lagomorpha (hares and rabbits), but occasionally it had been reported from cats. In a previously written article, Dr. Hall had reported nine cases in the cat in the United States, and subsequent to the publication of his article (Journal of the A. V. M. A., July, 1921), he had heard of two other cases, which, together with my own, brought the total number of such cases up to that time to twelve.

Some time afterward, I removed several more of the larvae from the necks of kittens on the same premises where I had found the first one. I reported these to Dr. Hall at the time, and he replied that he was very much interested to learn of the additional cases.

I have never since seen this parasite in the cat, but should I ever again come across it, I shall be sure to recognize and be able to classify it, thanks to Dr. Hall.

M. J. Hughes

Long Island City, N. Y.

ROCKY MOUNTAIN SPOTTED FEVER

I noticed an item in the October issue of Veterinary Medicine, page 469, stating that Rocky Mountain spotted fever was secondary in human beings. While true, this may be somewhat misleading. I lived fifteen years in Montana and in the section where this disease was a menace to the health of the people. The west side of the Bitter Root Valley was nearly abandoned at the time I was there during the spring months of 1907 to 1910.

During 1910, Dr. Ricketts, a pathologist sent there by the government to discover the cause of the disease, contracted the disease himself and died while trying to produce a horse serum to prevent the disease in humans, it being considered incurable at that time with a mortality of 99 per cent.

The Dermacentor venustus and Dermacentor modestus are the ticks charged with carrying this infection, a protozoan, Babesia hominis. The female tick obtains the infection from the ground squirrel, which is susceptible to infection but resistant to the disease, thus acting as a carrier and a source of supply to the female tick, which then passes the organism through the ova to the young ticks which crawl upon brush and wait for a host. If the host be a ground squirrel, there is a new source of infection, and if one of the domestic animals, the tick has a good feed and falls off with no damage to the host. But if the host is a human,

there is a job for the undertaker in about thirty-six hours.

The domestic animals did not prove susceptible to natural infection, but the monkey tribe were very susceptible, thus forging another link in the theory of evolution, as man and monkey were the only animals except rodents susceptible to natural infection.

In the three years I was in that section, there were thirty-five deaths among human beings from spotted fever. The danger season is from April to July, the rest of the year being comparatively free from danger. This is of small importance to the veterinary profession, unless they should happen to go to such a section in the spring, in which case they should immediately cauterize any tick or unknown insect bite at the earliest opportunity.

S. A. Freeman, D. V. M.

Gridley, Cal.

ETHICS AND EVOLUTION

Webster defined ethics as the science of moral philosophy, a definition which was rather elastic and left much to imagination. Stedman defined it as the science of morality. In relation to medical practice, the principles of correct professional conduct with regard to the rights of the doctor himself, his patients, and his fellow practitioners. It seems that the elasticity of the definition has increased to a marked extent as pertaining to the practice of medicine, and we await future translations with interest.

Webster defines evolution as a change of position; act of unfolding. Stedman defines it, to roll out. The evolution through which the medical professions are passing has developed at a rapid rate during the past ten years. Ten years ago ninety per cent of our time and drugs was employed in the treatment of diseases; today ninety per cent of our time and the remedies employed must be utilized in preventing disease if we are to receive the compensation due us for the time and money expended on our education.

The veterinarian who is adhering strictly to his conception of ten years ago, of professional ethics is certainly getting "rolled out." A little more of Webster's "moral philosophy" would be more applicable to this day and age than the construction placed on professional ethics by the medical profession of ten years ago.

A few months ago Dr. A. T. Kinsley invited us to express our thoughts and experience, if we had any, in devoting our spare time in calling on our clientele in the capacity of a salesman, selling mineral mixtures, hog powders, or other such products. If it is ethical and professional for a veterinarian to serve in the capacity of a commercial salesman, will his practice be increased or diminished as a result of such activity? Personal interest prompts me to bring the question to your attention again, and in order to invite criticism and discussion I should like to ask a few questions.

If our soil is deficient in calcium and phosphorus, where are the domesticated animals or fowls going to obtain these minerals so vital to their health and welfare?

If it were possible to restore our soil to its virgin state by the application of limestone and rock phosphate, would there not still be a deficiency due to extensive cropping?

If all plant life, such as timber, grass, weeds, grain and vegetables, extract these minerals from the soil, was there a mineral deficiency several hundred years ago, if so, when did it start to require a new supply?

Will one or two applications of limestone, rock phosphate, or both, restore our cultivated soil to a state whereby the grain and hay grown on it will contain a sufficient amount of these minerals to establish an equilibrium in our live stock, if not, why?

Will a horse, when at work, or a cow or a sow during the period of lactation derive sufficient mineral matter from grain and hay raised on cultivated land to supply their bodily demands?

What effect will line breeding, as applied to the milch cow of this day and age, have on her body and skeletal frame with the increased demand for minerals, made necessary by her increased production of milk and butterfat? This might also apply to the mare, ewe and sow in a minor degree.

If we violate the laws of nature by developing our milking strain of cattle to the extent that yearling heifers which have not been bred come on a milk flow sufficient in extent to demand attention, can we explain it by saying that nature makes provisions for such cases? Will such heifers develop and maintain a state of usefulness and profit as long as an ordinary cow? If so, will these heifers, on development, require more mineral matter in order to maintain a state of usefulness and profit?

The Chicago Veterinary College Quarterly Bulletin, Vol. VIII, No. 2, of December, 1912, contains a case report on lactation in a colt one day old. I was a student in charge of this case and have not forgotten it.

Are minerals which are not soluble in water soluble in the gastric juices? If so, approxi-

mately how long should they remain in the stomach to render them soluble?

Is it possible to derive any results through absorption in the digestive tract from any mineral mixture containing calcium and phosphorus which also contains even a laxative dose of magnesium or sodium sulphate? Will these two sulphates, even in small doses, increase secretions and elimination to an extent sufficient to prevent absorption of the minerals? If so, is it possible to combine a mineral mixture and a stock powder containing these sulphates under the name of regulators and derive satisfactory results?

Are we ethical and professional when we permit our clients to be fleeced by peddlers, agents and unscrupulous commercial firms? Does the average farmer's education permit him to make these deductions?

Dr. Kinsley tells us in the July issue of Veterinary Medicine that mineral supplements are of value when there is a deficiency of minerals in the feed. The usual deficient elements are iodin, phosphorus and calcium. These may not all be deficient in the same food and the progressive veterinarian is one that will determine the specific deficiency and supply it in the proper form rather than prescribing some prepared form of mineral compound that contains a variety of unnecessary and in some instances expensive ingredients.

In view of the large and rapidly increasing field of indications for iodin, calcium and phosphorus in the treatment and prevention of conditions in stock, due to a deficiency in these elements, would the veterinarian be ethical and professional if he solicited his clientele and sold them a properly balanced preparation containing these elements together with a small percentage of sodium chlorid to render the mixture palatable?

Would .05% of K. I. to the hundred pounds of this preparation, render it unsafe to animals which possess an idiosyncrasy for this drug?

The numerous indications for a mineral preparation of this nature, the elimination of the peddler and agent, the confidence and respect of our clientele, the increase in compensation and the welfare of our live stock, all indicate to me that the proposition is both ethical and professional.

Why not express your thoughts and experiences through the columns of our valued journals? Dr. Kinsley was looking for information, as am I.

L. C. Hull, D. V. M.

Joslin, Illinois

International Newsreel

Mrs. Sophie Penkinson, 54 years old and the only woman blacksmith in the country, who plies her trade at a shop in Pike Street, New York City.

STOMACH WORMS AND NODULAR DISEASE OF SHEEP

In the first test, conducted in 1922, nodular disease, as indicated by the presence of nodules on the intestinal wall, was eliminated and stomach-worm infestation reduced 94.5 per cent by management alone. The system of management employed consisted of raising the lambs in the barn with the infested dams until weaning, after which the lambs were placed on clean rape forage and rotated to fresh forage at intervals not exceeding ten days. A similar group of lambs, constituting the check lot, was raised throughout the pasture season on infected permanent pasture with their infested dams.

In 1923 this test was continued except that, in addition to the management, half the lambs in both forage and permanent pasture lots received the copper-sulphate treatment for stomach worms. The lambs on rape forage were changed to fresh forage at two-week instead of ten-day intervals as in the first test.

Post slaughter examination of the stomach and intestines of all the lambs in the different groups showed 1 nodule and 22 stomach worms in the nine forage crop lambs; no nodules nor

stomach worms in the lambs on rotated forage and receiving the copper-sulphate treatment; medium to heavy infestation of all the untreated lambs on permanent pasture; and light stomach-worm infestation of all the treated lambs on permanent pasture. Practically all the lambs on permanent pasture, whether with or without medical treatment, showed nodules.

The results indicate that stomach-worm infestation in lambs on permanent pasture was held in check by administering the copper-sulphate treatment; that the better management as employed in this test was sufficient to reduce stomach-worm and nodular infestation; and that the copper-sulphate treatment in addition to this management eliminated stomach-worm infestation completely. In the permanent pasture lot the medicinal treatment was of no value in preventing nodular disease.—An. Report, Ohio Exp. Sta.

NUTRITION TRAILS

In recent years another function of vital importance has been discoverd in plants, and that is their power to construct vitamins. It is now known that these substances are absolutely indispensable to life, and plants alone can produce them. The animal body does not possess this function, although it may store the vitamins for a time in certain of its tissues and even pass them on to its offspring through its milk. The chemistry of vitamins is still too meager to offer any information concerning their production, but recent investigations indicate that sunlight plays an important part in their construction. One exception, however, should be noted in the case of the vitamin found in sprouting oats or wheat, where the sprouts obtained by germination in darkness are apparently just as efficient as those obtained in sunlight.

In a material sense the words of the Psalmist: "All flesh is grass," is true. Without the vitamins produced in plants, there could not be life or growth in animals. Herbivorous animals represent vegetable material transformed into flesh, and meat consumed from this source may, in this sense, be regarded as the modified product of plant life.

Light Plays an Important Rôle

Back of it all is light. The energy of life is derived from the energy of the sun. If any form of idolatry could be justified, that of the Sun-worshippers is the most worthy. Light has made its impress upon therapeutics. Its beneficial effects in the form of X-rays and ultra-violet rays have already been demonstrated and we are still, doubtless, only on the threshhold of the knowledge of its chemical reactions with the tissues. Even in its destructive form, light is beneficial to humanity in that it destroys those organisms which work in darkness and which menace health and safety. Light is Nature's antiseptic and purifier.

Diabetes a Deficiency Disease

One of the oldest nutritional diseases is diabetes, occasionally encountered in the dog, but only too commonly found in the human race. Until recent years it has defied all scientific effort to subjugate it. It is now known that the disease is associated with a deficiency of the internal secretion of the pancreas. In this sense it is a deficiency disease. It is now believed that the abnormal condition or lack of this secretion interferes with the glycogenic function of the liver and likewise the muscle and other tissues, by inhibiting their power of utilizing the food sugar brought to them by the circulation. The recent discovery of insulin and its application to this disease presents some points of analogy to the thyroid deficiency in cases of cretinism. By supplying the missing material improvement results, which, unfortunately, is not permanent; for, on discontinuing the treatment, the symptoms reappear. —P. A. Fish in the Jour. A. V. M. A., June, 1924.

POULTRY PARASITES

At the seventeenth annual meeting of the American Association of Instructors and Investigators in Poultry Husbandry, at Manhattan, Kansas, August 10-15, Dr. Achert of Kansas discussed parasitic worms of poultry, stating that five species of tapeworms are found in Kansas. Three of these are transmitted through the fly. One kind is transmitted through the stable fly. The control of tapeworm infestation is largely a problem of fly extermination. Roundworm eggs have an incubation period in the soil of one month. Seven days after the incubated egg is eaten, the worm hatches and burrows into the intestinal mucosa. It does not migrate to the lungs as in the hog. There is a marked difference in the sugar contents of the blood in parasitism. Roundworm eggs on surface soil exposed to the sun are killed in two weeks. Two inches below the surface, they live for three weeks. Eggs four inches below the surface were dead at the end of four weeks. The death of the egg embryos was due to the heat and not to the direct action of the sun's rays. In July and August the temperature of the soil goes as high as 129 degrees. Labora-

tory experiments show that a temperature above 108 degrees will kill worm eggs.

At the same meeting, Sherwood of Texas, in a discussion of the control of coccidiosis in poultry by various feeds, reported negative results from the use of lactic acid, milk feed or alfalfa in the rations. Flocks of young chicks fed these rations died as rapidly when infected as did the control pens.

A REMEDY FOR EMPIRICISM

This is a subject that has been both cussed and discussed in general and in particular by the veterinary profession. But as I see it, it is somewhat like the negro question—that is to say, it is not so much a question as to what we would do without the empiric as it is of how we are going to treat him as long as we have him with us.

I do not hold the bitter animosity towards the empirics that seems to prevail among some others of the profession. Probably this is because of an intimate association with them. They say it is better to be in the good graces of a dog than not to be so, and I have found this to be true not only with dogs but with empirics and with all other classes as well.

The best way to eliminate an empiric is to give him rope enough to hang himself. Many young practitioner has ruined his prospects by lambasting all of the empirics in the country around and at the same time lauding his own ability. If you treat the empiric as you should, he will make business for you rather than take it from you, as he will constantly be getting up against something that he does not understand, and if you are on agreeable terms with him, he will come to you to help him out. Then if you conduct yourself as you should, it will result in reflecting credit on yourself as well as on the profession.

But right here is where we should use a goodly supply of common sense should we happen to possess any. Friends and clients of the empiric constantly will be setting traps for you to fall into. For instance, one of them will say to you, mentioning the empiric by name: "Say, Doc, he don't know anything, does he?" This is done for the express purpose of getting you to abuse Mr. Empiric so they can run and tell him, thereby establishing an enmity between you and the empiric. But if you have your head working properly, you will not fall for this trick, and instead of "knocking" the empiric, you will say: "Oh well, he has had some experience and naturally would know something," and then drop the subject. You will thereby defeat the object of the apparently benevolent gentleman who seeks to promote enmity.

I make it a point never to use the prefix "Doctor" when addressing an empiric, as I think the word is desecrated enough by many within our profession.

Several years ago, I used to think that my own state was the worst infested with empirics of any state, but I have found this not to be the case, as some of the quackiest quacks I ever saw I found in one of our great middle western states.

In closing, I will say that my advice to the profession, both young and old, is to treat empirics as such, and not as d—n fools as some of the self-appointed advisers of the profession would have us do.

Rembrandt Morgan

Winfield, W. Va.

THE VETERINARIAN AS A POULTRYMAN

I noticed in the July issue of Veterinary Medicine that the judge wanted some one to write on poultry, and I have been waiting to read something from practitioners on that subject, being rather rusty of late years myself on this topic and so did not care to undertake it. However, I will try to touch on a few of the high points of a poultry practice, and in this connection would advise the young practitioner who expects to make the treatment of poultry a large part of his practice, to have a flock of his own of one breed, and only one breed, and handle them in such a manner that his clients will come to put confidence in his advice and treatment from the way he manages his own flock.

There are four cardinal points that should be closely observed in a successful poultry practice—breeding, housing, feeding and treatment of ailments. But if one will observe the first three, there will hardly ever be any necessity to consider the fourth. I am speaking from a practical standpoint, having been in the poultry business for twenty-five years myself, raising S. C. Rhode Island Reds, from 700 to 1200 a year, all hen hatched and brooded. I do not expect to say much in this article about diseases and treatment, parasites, etc., as the reader can get that better out of Dr. Kaupp's and other works on the diseases of poultry. It is the prevention of disease to which I wish to call the practitioner's attention, and I can best do this by giving it as practiced in my own flock.

First, as the breeding and housing of poultry

are so interwoven, I shall give them together. I started with healthy stock from a reliable breeder, fifteen year-old hens and one cockerel, with two houses, one for the matured birds and one for the youngsters that were coming on. At the end of the second year, I built yards and houses to accommodate about 1,000 birds, with but very little addition during the remainder of the time I was in the business. These quarters consisted of four pens for the breeders, each with a house fronting the east, and twelve pens for the setting hens and the youngsters that were to be hatched, with an open front colony house in each of the twelve pens. I never set a hen in the breeding pens, nor did I ever set one hen at a time unless I didn't want to raise more than a few chicks. As soon as two hens went to setting, they were removed to colony house No. 1 and set on seventeen eggs each. When the eggs hatched, the chicks were all put with one hen, and very rarely were there less than thirty chicks. This kept up until the twelve pens were occupied, which made about 360 chicks the first round. As hens were set three times during the season, it made an average of about 800 chicks raised each year. Under this system, I had no trouble of other hens laying in the nests of the ones that were setting. As each chick was toe-marked when first hatched, I knew which pen it was from when grown.

I sold my eggs from pen No. 1 for $10.00 per setting of 15 eggs; from pen No. 2 and No. 3, for $5.00 per setting; and from pen No. 4 for $3.00 per setting.

I commenced culling the birds at ten weeks old, and all culls were put on the market at that time to make room for the maturing pullets and show cockerels that were coming on, so that the flock was reduced to about eighty birds by Christmas.

There is a great difference of opinion among successful poultrymen on feeding as to the kind of feed and the manner of feeding, some preferring the dry mash, some the wet mash, hopper feeding, etc. I prefer the wet, not sloppy, mash every morning for the old birds, fed in shallow troughs, about a handful to each bird. I usually had sixteen birds to each breeding pen. At night they received their grain feed, and during the day there was plenty of rape or other green feed thrown into the pens for them to work on. I always tried to feed my flock enough but to avoid overfeeding them at any time, which was my great trouble when I first embarked in the business: This is why I did away with hopper feeding and throwing grain to them in greater quantities than they would eat in thirty minutes. By this means, I never had any crop-bound birds nor congestion of the liver among them, nor any birds messed up behind with a diarrhea from indigestion.

I always supplied my laying flock with an available protein diet, and for a digestible protein, I never found anything that would equal soy bean meal. As I had sixty acres of land, I always raised several bushels of soy beans each year and had them ground into meal by a miller nearby. I never fed velvet beans to poultry. They will do for cattle and hogs but are a poor feed for poultry, and they are not fit to feed to a horse as they blacken his teeth and make his mouth look unsightly.

While cottonseed meal is very rich in protein, I always thought too much of my flock of birds to feed it to them as I had seen too much trouble in other people's flocks through feeding this indigestible protein. It is a well known fact that for poultry an animal protein in the way of meat scraps, etc., gives better results in egg production than does protein from most grains and cereals. However, where one feeds 12% meat scraps with an ordinary commercial mash feed, one will get as many eggs from a mash containing 60% of soy bean meal with the addition of 5% of a good mineral feed to each 100 pounds of mash, leaving out the meat scraps entirely, besides maintaining the health of the flock. But still better results can be had by feeding 6% of meat scraps and 4% of a good mineral mixture with the soy bean mash.

The following formula of an egg mash gave me better results and kept up the health of my birds better than any commercial mash I could procure:

20 lbs. soy bean meal
15 lbs. wheat middlings
20 lbs. wheat bran
25 lbs. ground oats (screened)
10 lbs. cornmeal
6 lbs. meat scraps
4 lbs. mineral mixture

This was fed once a day in shallow troughs. My grain mixture was as follows:

40 lbs. wheat
25 lbs. oats
35 lbs. cracked corn

This grain mixture was fed late in the evening, about what they would clean up in twenty or thirty minutes, as my idea was to feed my birds and not to stuff them.

Diseases and treatment: As stated in the beginning, this part will be passed over lightly, and I will give only the treatments I have used to the best advantage.

In earlier days I tried almost all of the remedies advocated for fowl cholera, but found none that gave the results that echinacea did—a teaspoonful of the tincture in drinking water for each twelve fowls.

Roup, papilloma contagiosa or sore head, is best treated with spongia, either the tablets or tincture, and for external application, thuja will beat them all.

There is no treatment of any benefit for white diarrhea. However, it is one of the easiest diseases to prevent by proper feeding of the parent stock and the little ones from the time they are hatched to maturity.

By the foregoing methods, I cleared around $700.00 a year with my poultry, which interfered but very little with my practice, not counting the fresh eggs and fryers we had for the table. However, I do not credit myself for doing all of this, as the good wife saw to it that the flock was well looked after while I was making my professional calls. This is another item of advice I would give to the young veterinarian, that is, take on a helpmate at the very earliest possible moment, unless your choice is one that thinks more of ribbons and the lip stick than she does of the chickens. But I believe the average young veterinarian is a man of good judgment. So go ahead, for as mentioned in the good book, "It is not good for man to be alone."

When the veterinarian has demonstrated to the community in which he serves that he not only knows how to treat diseases successfully but is a poultry husbandryman and poultry judge as well, then he will soon be called on to give instructions on feeding, mate up breeding pens, pick out birds for the poultry show, and judge the poultry at the county fair.

I want to take this opportunity to state that in my opinion there never was a better time for a young man to enter a veterinary college than now. When I graduated, practically all the instruction we received was to treat the horse. Now the student gets in addition to instruction on treating the horse and all other animals and poultry, animal and poultry husbandry, meat and milk inspection and many other important subjects that we older graduates never had the opportunity to learn at school and had to get after we went out into practice. Therefore, I think the future never was brighter for a young veterinary graduate than at the present time. I do not mean that a veterinarian can expect to make a success without hard work and study and simply relying on his diploma to carry him through. That is just a starter.

Preventive medicine is going to be the watchword after this, and the one that learns the most about animal and poultry husbandry is going to be the successful one. But it takes work and study after one gets out of college. If the young man of today would take the pains to learn as much about feeds and feeding as he does to adjust a carburetor, it would probably be more profitable to him in the long run, for the young men will soon have to take the place of the older ones. For myself I still rise at 4:30 in the morning, and as I think my neighbors will say, it takes a pretty good man of twenty-five to follow me all day. At least, my exercise is fairly strenuous for a man that was born May 11, 1855. In conclusion, I wish to reiterate that there is a great future for the young veterinarian who will work.

G. W. Browning, V. S.

Mobile, Ala.

DIGESTIVE DISORDERS IN POULTRY

I have noted with interest the comment on page 453 of the October issue of Veterinary Medicine relative to digestive disorders in chicks before the yolk sac is absorbed. I believe the statement is correct and that it is a feature upon which too little stress has been laid.

The writer has held somewhat radical ideas regarding the white diarrhea problem in chicks. This was established way back in 1905 and 1906 when I was an active poultry enthusiast and raising all sorts of chickens as well as undertaking investigations to determine the diseases from which they die. This was at the time when bacillary white diarrhea was first brought out, and during my work with the Canadian Department of Agriculture, I was unable to find a single case in which I could convince myself that the Bacillus pullorum was a causative factor. Reference to some of the old reports which I presented will indicate that the yolk sac was responsible for the entire condition, especially in young chicks up to a week or ten days old.

Usually the yolk sac, when not absorbed at the time when the chick emerges from the shell, acts as a foreign body, becomes putrid, and is undoubtedly a source of infection. It also acts as a mechanical obstacle to the passage of feces, and if one will harden a dead chick in formaldehyd and then cut it in the middle longitudinally, it will be seen that the filling of the gizzard presses upon the intestine causing a stoppage. This means that the feces cannot pass through, but it does not act as an obstacle to the secre-

tion from the kidneys, which in fowls is white and semi-fluid in character. This, in my view, leads to a diagnosis of white diarrhea, and the suggestion of the harm done by the use of solid foods before the yolk sac is absorbed, is a most timely one.

I even went further and stated that all chicks should be fasted as a routine for forty-eight hours and that instead of being given mashes and ground food, they should be fed small seeds and grit in order that the gizzard may assume its normal function as a mill in which the food is ground. I never have been able to understand the reasoning which has suggested grinding of food for fowls, for the reason that they have the apparatus within their anatomy, and unless the normal physiological function proceeds in the manner which nature intended, ills of various kinds are bound to follow.

During the time when I was keeping fowls as a hobby, I fed only whole grains, and the egg record of my flock equaled that of the most fanciful feeding of the time. Furthermore, my chickens had practically no illness, and I was able to keep fowl in the low temperature prevailing during the winter in Ottawa, Canada, without artificial heat or special protection of any kind excepting that the roosting spaces were protected so that the fowls were warm at night. The only front to the poultry house was a cotton front, but care was exercised to see that there were no drafts, and this in a temperature of from zero to ten or fifteen below every night did not have any unfavorable influence on the egg production.

To go a little further than the comment in the October issue, it may be of interest to note that the feeding of soft foods will many times cause an unthriftiness manifested by a thickening of the wall of the small intestine due to a chronic inflammatory condition, a result of improperly digested foods. This condition may increase to such a degree that the mucous membrane of the gizzard becomes ulcerated, resulting in sick fowls which many times will be referred to as affected with cholera, when it is nothing but the result of improper feeding.

I have gone to a greater length in the foregoing than I anticipated, but I believe the whole matter is one that needs a clearer elucidation than is being given by many of the so-called poultry experts. When investigating poultry diseases, it would seem to me that too great stress is laid upon bacteriology and pathology rather than enough common sense upon physiology and anatomy as well as clinical observations.

It is hoped that these remarks may prove of interest to some of those engaged in finding the method that should be pursued to increase production and decrease illness among poultry. That the industry needs this assistance is manifested by the fact that in all probability it requires at the present time 100 eggs to insure the carrying of thirty chickens to a natural producing or marketable age. This loss is too great and does not equal the results achieved by the Egyptians two thousand years ago or the Chinese in the same period. Perhaps artificial incubation is at fault. The Egyptians and the Chinese were able to hatch a larger percentage from a given number of eggs than at present obtains. Here again, we may have too much theory and not enough hard common sense obtained by practical experience.

Chas. H. Higgins

New York City

"OVER THE TEST TUBES"

Sir Coptic and Lady Mange have taken up their residence at "Epidermis," their home in the Follicle region. They expect to be visited shortly by Mr. Creolin Bath, after which they will leave.

Bacterium Anthracis and family are visiting the farm of Mr. Gottem Badeley. It is possible they will go on and visit the homestead of C. Later.

A delightful afternoon was spent yesterday at "The Incubator," the home of Aunty Toxin, the well known society hostess. The party, numbering about one hundred thousand to the cubic centimeter, were entertained at iodin tea, the exclusive brand of Messrs. Gram & Son. A lengthy musical program had been arranged, and chief among the numbers rendered was "The Leucocytes' Lament," which was encored. Sir Premia Toxin gave Bang's great masterpiece "The Tubercle's Terror." The party broke up, after a most enjoyable time, on the arrival of Sir Hotstick Platinum.

Aunty Toxin has left "The Laboratory," accompanied by Miss Di Rections.

A miscellaneous shower was given recently by Mr. and Mrs. Aqua Tappii in honor of their daughter Alkali.

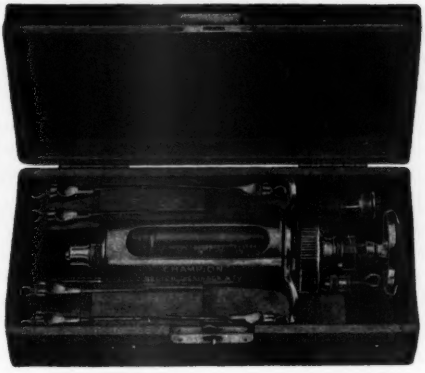
H. P. Hamilton

Ontario Veterinary College

B-D PRODUCTS

Made for the Profession

DESIGNED *for* SERVICE



Champion-Lok Syringe and Needle Outfit

Champion-Lok Hypodermic Needles
Champion Intradermic Outfits
Champion Thermometers
Champion-Lok Syringes
Champion-Lok Needles
Milk Fever Outfits
Jaw Spreaders

Metal Ring Top

Champion Therm.

Cattle Trocars
Pig Balling Guns
Champion Teat Plugs
Aseptic Milking Tubes
Champion Pill Injectors
Champion Dose Syringes
Champion Injection Syringes

ILLUSTRATED CATALOGUE SENT ON REQUEST

Sold Through Dealers

BECTON, DICKINSON & CO.

RUTHERFORD, N. J.

CHANGES OF VETERINARY OFFICERS, REGULAR ARMY

Major Robert J. Foster, Fort Riley, Kansas, promoted to rank of lieutenant-colonel, effective August 30, 1925.

Major George A. Hanvey, Fort Ethan Allen, Vermont, promoted to rank of lieutenant-colonel, effective September 6, 1925.

Captain George H. Koon, Carlisle Barracks, Pa., promoted to rank of major, effective September 27, 1925.

Captain Ralph M. Buffington, Fort Sam Houston, Texas, promoted to rank of major, effective September 29, 1925.

Captain Daniel B. Leininger, Camp Marfa, Texas, promoted to rank of major, effective September 29, 1925.

Captain Daniel H. Mallan, relieved from assignment and duty with veterinary detachment, Fort Riley, Kansas, and assigned as student at The Cavalry School, September 13, 1925.

VETERINARY RESERVE OFFICERS

Additional Reserve Officers:

Majors:

Allen, Leslie J., 5133 Birchman Ave., Ft. Worth, Tex.

Cheely, Edward I., Box 153, Milwaukie, Oregon.

Captains:

Krubsack, Grover Wm., 48 N. Clinton Avenue, Clintonville, Wisconsin.

Topmiller, Alex Charles, Murfreesboro, Tenn.

1st Lieutenants:

George, Frank H., Plain City, Ohio.

Stott, Lewis Niles, 420 Delaware Avenue, N. E., Mason City, Iowa.

2nd Lieutenants:

Davis, Ennis Augustus, 47 W. Cain Street, Atlanta, Ga.

Bogue, Joseph Alvin, Lawrence, Kansas.

Foster, Robert Sanderson, 825 Williams Avenue, Portland, Oregon.

Miller, Norman Duman, 310 N. 11th Street, Muskogee, Okla.

Nevitt, John Victor, Box 282, Wichita, Kan.

Moburg, Edwin Russell, 410 W. Walnut St., Salina, Kan.

Dr. Olene Jacobson, a graduate of the Iowa State College last June, has located for practice at Burt, Iowa.

Dr. S. W. Wiest of Santa Fe, N. M., was reported to have suffered from a severe illness that incapacitated him for work during August and September.

Dr. C. Vandermeer has located at Brownsville, Ore.

Dr. C. R. Niday, formerly at Gallipolis, Ohio, is now located at Washington Court House, in the same state.

Dr. H. W. Schmees has moved from Forest City to Morganton, N. C.

Dr. Jno. I. Handley, Sec.-Treas. of the Southeastern States Veterinary Medical Association, has announced that the tenth regular annual convention will be held at the Henry Grady Hotel, Atlanta, Ga., November 9th and 10th. Dr. Handley states that an attractive program has been arranged and this meeting promises to be the best the association has ever held.

The Central Missouri Veterinary Association met at California, Mo., August 28th, as the guests of Dr. and Mrs. B. Miller, who entertained those in attendance with a dinner at the country club. A business session was held, after which a visit was made to the Moniteau county fair. Those attending the meeting were Dr. and Mrs. George of Clinton, Dr. and Mrs. Allen O'Bannor of St. Joseph, Dr. C. D. Luckett of Blackwater, Dr. and Mrs. J. L. Jones of Marshall, Dr. and Mrs. G. A. Shikles of Dearborn, Dr. H. A. Wilson, State Veterinarian, Jefferson City, Dr. Fred Cater of Sedalia, Dr. and Mrs. Frank Heuben of Sweet Springs, Dr. H. L. Mahnken of Marshall, Dr. A. L. Allen of Warrensburg, Dr. C. W. Lawson of Sedalia, and Mrs. C. W. Girdestone of Pensacola, Fla., who was a guest.

Dr. C. G. Kreidler, who resigned from his position as assistant state veterinarian of Kentucky to accept the position of meat inspector at Lexington, Ky., has resigned the latter position and returned to the first, going back to his old desk in the state veterinarian's office at Frankfort.

Dr. and Mrs. J. T. Buchtel of Lockhart, Texas, spent the month of August in an automobile tour which took them as far as Ohio and Michigan. On his arrival home, Dr. Buchtel was called to Houston to assist in the eradication of the foot-and-mouth disease outbreak.

The Knoxville (Tenn.) Journal and Tribune of September 6th contained an extensive write-up of the veterinary hospital operated by Drs

SERO-TOXYLIN

Prevents

CANINE DISTEMPER

Since our recent announcement of the discovery and perfection of an antigen and an anti-antigenic serum for immunization against canine distemper, the Bureau of Animal Industry has concluded a six month investigation of these products, and has found them to be reliable agents.

Veterinarians in all parts of the United States have thoroughly tested Sero-Toxylin, and have found that it actually permanently immunizes against canine distemper. The cost of producing Sero-Toxylin is high, but it protects dogs against distemper.

Prices	Code Word
Per package of 1 complete treatment .....$ 2.60	**(pup)**
Per package of 6 complete treatments..... 15.00	**(dog)**

Kinsley Laboratories

New Centre Building

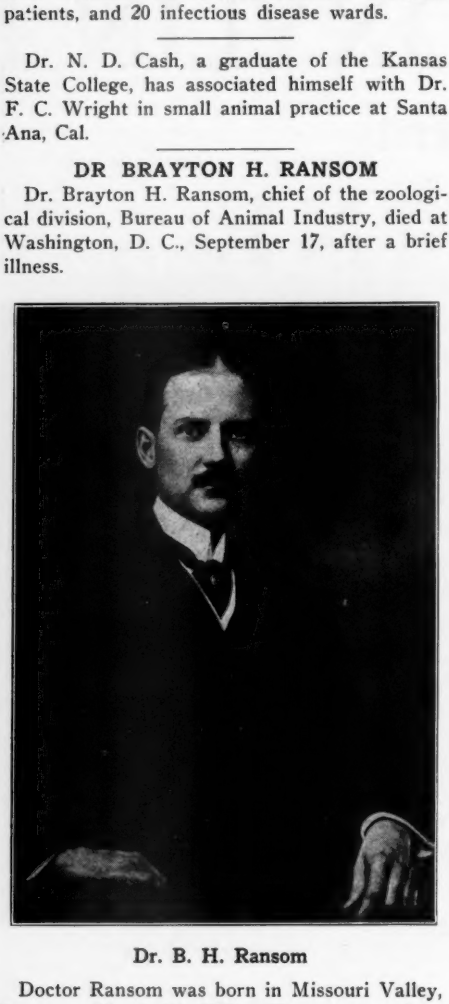
KANSAS CITY **MISSOURI**

G. A. Metcalf and M. Jacob at Knoxville. The institution has been in existence twenty-five years. It is described as being equipped to handle between 40 and 50 dogs, cats and horses, with 10 stalls for horses, 20 kennels for surgical patients, and 20 infectious disease wards.

Dr. N. D. Cash, a graduate of the Kansas State College, has associated himself with Dr. F. C. Wright in small animal practice at Santa Ana, Cal.

DR BRAYTON H. RANSOM

Dr. Brayton H. Ransom, chief of the zoological division, Bureau of Animal Industry, died at Washington, D. C., September 17, after a brief illness.



Dr. B. H. Ransom

Doctor Ransom was born in Missouri Valley, Iowa, on March 24, 1879. His parents subsequently moved to Nebraska, and he received the degree of B. Sc. from the University of Nebraska in 1899 and of M. A. in 1900. He had a fellowship the next year at the University of Nebraska, and the following year at the University of Missouri. Following this he came to Washington in 1902 as assistant in the zoological division of the Hygienic Laboratory of what was then the Public Health and Marine Hospital Service, now the Public Health Service. A year later he was put in charge of the zoological division of the Bureau of Animal Industry, United States Department of Agriculture, and in 1906 was made chief of division, in which capacity he served until his death.

As chief of the zoological division, Doctor Ransom built up a laboratory known the world over for its large output of high-grade scientific and practical work in the field of parasitology. Under his direction the laboratory had built up the largest and finest catalogue and index of parasites in the world, the catalogue and index being the admiration of foreign parasitologists the world over. His administration of his division in its relation to his staff was most generous and fair, and the division has been long known for its high morale and enthusiasm. It was never a one-man laboratory, but was gradually built up to four times its original size in order to meet the many pressing economic problems in the field of parasitology in its relation to the livestock industry of the United States. The zoological division has published a large number of monographs and shorter papers of a systematic nature, standardized the field inspection procedure in dipping for various external parasites of livestock, introduced one new drug, carbon tetrachloride, into human medicine, where it has been extensively used for the treatment of hookworm disease in practically all countries where the disease occurs, and carried out numerous other investigations on life histories, control measures for parasites, etc.

In the field of economic parasitology Doctor Ransom's division, and in many cases Doctor Ransom himself, first found and reported many new and economically important parasites, developed many practical control measures for such important parasites as stomach worms in sheep, and did the basic experimental work on which much of the meat inspection procedure as regards parasites is based. Doctor Ransom's most striking and important work of late years was his demonstration of the exact life history of the swine ascarid and the development of a swine sanitation system based on this. This system, known as the McLean County System, has been of incalculable value to the swine industry. The life history work done by Doctor Ransom in this connection led to the bestowal on him of the Gold Medal of the Seamen's and Tropical Diseases Research Association, of Kobe, Japan.

Doctor Ransom was a member of the American Microscopical Society, the American Society of Zoologists, the American Society of

Tropical Medicine, the American Society of Parasitologists, the Washington Academy of Sciences, the American Association for the Advancement of Science, the Biological Society of Washington, the Helminthological Society of Washington, of Sigma Xi, of Phi Beta Kappa, of Beta Theta Pi, and of the Cosmos Club. He was at one time or another president of the American Microscopical Society and the Helminthological Society of Washington, vice president of the Washington Academy of Sciences, secretary-treasurer of the American Society of Tropical Medicine, councillor of the American Society of Parasitologists, associate editor of the Journal of Parasitology, and delegate to the Seventh International Zoological Congress, the first Pan American Scientific Congress, and the Fourth Fisheries Congress.

Dr. Ransom was a man who had many friends and no enemies. He was uniformly courteous and gentle in the face of many troubles and burdens. In his death the world has lost a valuable scientist who has returned to it many times what he received from it, and his friends have lost a friend who was always considerate and helpful.—The Official Record, U. S. Dept. of Agriculture.

RESOLUTION ON DEATH OF DOCTOR RANSOM

The members of the National Association of B. A. I. Veterinarians of Chicago were deeply grieved to learn of the passing away of Dr. B. H. Ransom, Chief of the Zoological Division, Washington, D. C., September 17, 1925.

Dr. Ransom, because of his research work in animal parasites, was made an honorary member of our association and held in the highest esteem by its members.

He was frequently called upon during his official visits to address our association on different parasitic diseases, and after he had discussed a subject there was always something new and of value brought out.

We feel our country has lost one of her most valuable scientists, whose place will indeed be difficult to fill, but we must believe that the valuable work that he did will form a basis for greater achievements in the future in the field of parasitology.

While he was called away in the very prime of life, yet we believe that his efforts and work will continue to live on and on, and as someone has said:

"We know not what we shall be, but are sure
The spark once kindled by the eternal breath
Goes not out quite, but somewhere doth endure
In that strange life we blindly christen death.
Somewhere he is, but where we cannot tell,
But wheresoe'er God hides him, it is well."

Therefore, be it resolved, that the country has lost an able and efficient leader in the field of science, and our association a very valuable member.

Be it further resolved, that this association extend to his bereaved wife and parents the sympathy of the entire association, and that a copy of these resolutions be sent to the bereaved family and the same be spread on our minutes.

(Signed)
W. N. Neil
H. B. Raffensperger
A. A. Swain
Committee

KENTUCKY MEETING

The Kentucky Veterinary Medical Association met at Glasgow, Ky., on July 8th and 9th as the guests of Dr. Geo. Pedigo. The meeting was called to order at the Hill Crest Country Club by President W. W. Dimock, who stressed the importance of inducing students to enter veterinary colleges and the advisability of practitioners specializing in various branches of practice. He also spoke of the importance of correct diagnosis and made some encouraging remarks regarding the future of the veterinary profession.

Dr. Robt. F. Fisher gave a very interesting paper on milk hygiene, placing particular emphasis on municipal inspection and control. It was voted by those present to appoint a committee which would outline the function of the veterinarian in communities where milk and meat inspection ordinances are introduced.

Dr. Dimock's paper on contagious abortion was interesting and profitable to the members. He dealt with the avenues of infection and the means that should be taken to prevent the spread of the disease.

Following luncheon, the following program was presented:

Dr. Hans Jensen spoke on therapeutics, mentioning the various uses of hydrotherapy, ether and chloral hydrate in general practice. He also covered in his talk the various medicinal agents indicated in the treatment of fistula and malignant edema.

Dr. A. J. Steiner handled the subject of canine diseases, dealing with an extensive list of these maladies, giving briefly his diagnosis and treatment.

Dr. H. J. Shore's talk on hemorrhagic septicemia aggressin outlined particularly the proper use of this biologic and the experimental evidence that had proved its efficacy.

General discussion followed the papers.

At 7 p. m., a real Kentucky barbecue with all the trimmings was served by the ladies of Glasgow and will long be remembered by those present.

At 9 p. m., Dr. Dimock called the meeting to order for a business session, at which a number of important subjects were discussed and acted on, and the following officers elected for the ensuing year: president, Dr. J. A. Winkler, Newport; first vice president, Dr. T. J. Starnes, Russelville; second vice president, Dr. E. Calldemeier, Louisville; third vice president, Dr. Geo. W. Pedigo, Glasgow; secretary-treasurer, Dr. A. J. Steiner, Lexington.

The second day of the meeting was spent in seeing the sights of Mammoth Cave and Sand Cave, in which Floyd Collins lost his life. The navigating of Fat Man's Misery by Dr. Jensen and Cork Screw Pass by Dr. Dimock was commendable to both.

Dr. M. F. Ward has located for practice at Dodgeville, Wis. He was formerly at Sparta, Wis.

Dr. L. E. Day, in charge of the U. S. B. A. I. laboratories at Chicago, was in Utah during September in the interests of the eradication of tuberculosis of cattle.

HOWARD BRENEMAN BRADY

Dr. H. B. Brady died suddenly at his home in Lancaster, Pa., September 30th, at the age of 44 years, the immediate cause of death being cornonary thrombosis. Dr. Brady was born December 25, 1881, in Safe Harbor, Pa., and was graduated from the Ontario Veterinary College in 1906 and the McKillip Veterinary College in 1907. He immediately located at Lancaster, Pa., where through his untiring efforts and conscientious devotion to his profession he established a highly successful and extensive practice. His kind ways and lovable disposition endeared him to all who knew him, and his untimely death was a blow to the entire community. Dr. Brady joined the A. V. M. A. in 1918 and was a member of the Pennsylvania State Veterinary Medical Association, The Conestoga Veterinary Club, Lancaster Lodge No. 43 F. & A. M., The Tall Cedars of Lebanon, and the Emanuel Lutheran Church of Lancaster, Pa. He is survived by his widow and three children, also a brother and a sister, both of Lancaster.

Dr. H. A. Wilson, State Veterinarian of Missouri, gave two radio talks on October 16th, under the auspices of the State Board of Agriculture, his subjects being "Friendly Bacteria and How They Benefit Us" and "A B C's of Bacteriology."

Dr. D. F. Crouch, formerly in partnership with Dr. L. E. Campbell at Pine Bluff, Ark., has opened a veterinary hospital of his own in that city.

Dr. Fred W. Milke of Milwaukee, Wis., was married to Miss Mary Carlin of the same city, September 17th. Dr. Milke conducts a small animal hospital and is a member of the staff of the Wisconsin Humane Society.

Dr. Frank Stout has moved from Paloma to Mendon, Ill.

Dr. J. S. Koen of Bloomington, Ill., reports a very successful series of meetings of Illinois associations held early in October. The McLean County Veterinary Association held its annual fall clinic at Dr. J. G. Blum's hospital, Normal, Ill., October 6th, where Dr. Robert Graham of the University of Illinois, conducted a poultry clinic and conference. A similar clinic was held at Dr. W. L. Farley's hospital, Peru, Ill., October 7th, for the Illinois Valley Association, fifteen members being present, and all were enthusiastic over the new association and the help it is bringing them. The Northwestern Illinois Association met at Freeport, Ill., October 9th, with thirty-five members present. Dr. Robert Graham, Prof. John Van der Voort, Dr. Harry Caldwell and Dr. J. S. Koen made short addresses. Dr. Graham held autopsies and conducted a clinic on sterility. The following officers were elected: Dr. C. H. Rosentiel, Mt. Carroll, president; Dr. R. E. Kluck, Forreston, vice president; Dr. J. B. Baber, Stockton, secretary-treasurer. Dr. H. G. Hoover was elected a member of the executive committee for the second district.

Dr. H. W. Brown has changed his location from Portland, Ore., to Monrovia, Ind.

Dr. W. E. Turner, formerly with the Purity Serum Co. at Ft. Worth, Texas, is now with the Sioux Falls Serum Co., Sioux Falls, S. D.

Dr. A. D. Spooner, formerly at Guelph, Ontario, has moved to Detroit, Mich., where he is associated with the Fourth Avenue Veterinary Hospital.

PARA-DI-PARA

A new compound of coloring matter of Arsanil Acid

The Remedy for
DISTEMPER IN DOGS

A medicine far superior to any other similar preparation now on the market!

Merits of "Para-Di-Para" given by veterinarians in this country:

3. "Just a few lines regarding Para-Di-Para. I have used it on nearly every case of distemper that I have treated and have gotten excellent results. I think it is the best treatment for distemper, at least the best I have ever used."

PARA-DI-PARA IIIb

The Remedy for **Piroplasmosis** of Cows and Horses, also called "hematuria," occurring mostly in pastured animals.

For literature and further information apply to

J. J. FAHL

824 W. North Ave., Chicago, Ill.

Sole Agent for U. S. A., Canada, Mexico and Cuba

CONESTOGA CLUB MEETING

Dr. Henry S. Weber, Lancaster, Pa., Secretary of the Conestoga Veterinary Club, reports that the regular monthly meeting of the organization was held in the medical rooms of the Stevens House, Lancaster, Pa., October 8th. Dr. R. S. Amadon, formerly of the North Dakota State College and now Physiologist of the University of Pennsylvania Veterinary Department, addressed the club on the "Physiology of Small Animals." Dr. Amadon's lecture and the discussion that followed were greatly appreciated by those fortunate enough to be present. Dr. Harry W. Barnard presided, and the following veterinarians welcomed Dr. Amadon to Pennsylvania: C. V. Peace, J. J. Johnson, E. L. Cornman, M. O. Robinson, C. J. Bryer, H. B. Mitchell, B. P. Chodos, E. A. Seamon, R. L. Galt and H. S. Weber. The next regular meeting of the club will be held at the Stevens House, Lancaster, Pa., November 12th.

Dr. and Mrs. J. C. Van Ferney of Scotland, S. D., left on October 16th for a trip to Europe to visit his mother in Rotterdam, Holland, and spend the Christmas holidays with her. They expect to return sometime in February.

SOUTH DAKOTA STOCK KILLER CAUGHT BY GOVERNMENT HUNTER

Another notorious stock killer is dead. "Three Toes," a wolf said to rival the famous Custer wolf in the extent of stock killing and the way in which he has eluded capture, was successfully trapped in Harding County, S. Dak., last July. The honor of his capture goes to Junior Inspector Clyde F. Briggs, of the Biological Survey of the United States Department of Agriculture. More than 150 men have tried for "Three Toes" besides the men engaged in several big drives made by stockmen. Mr. Briggs took him in 15 days' trapping, using natural wolf scent as bait. The work was conducted in cooperation with the State department of agriculture.

This wolf has been a noted killer for more than 13 years, ranging over the western half of Harding County and northwestern Butte County in South Dakota; Bowman County, N. Dak.; and southeastern Carter County, Mont. It would be impossible to estimate his entire killings, but from available data and statements of stockmen who have lost heavily in recent years through his depredations, $50,000 is a conserva-

tive figure. He has destroyed several thousand sheep as well as a large number of cattle. Horses have not been counted against him, but he has killed many. He seldom killed only enough animals for food, but almost invariably destroyed from 10 to 30 head on each visit.

He was known to have killed in less than a month after their arrival 34 registered Rambouillet bucks, purchased at a cost of $35 each at a railroad point 75 miles distant. His kill of registered breeding sheep during the summer of 1922 was valued at $3,465. In 1923 his kill at three ranches was $6 700, and his total kill was estimated at $12 000. The largest single kill he made was 50 head of range sheep breeding ewes with their lambs and yearlings. Other ranchers have reported individual losses of 17 sheep in one night and 28 in one night. On an average these range sheep are considered worth $7 a head.

One of the difficulties in tracing the history of this wolf is the complete change in the livestock industry of Harding County within recent years. It was formerly a cow country, with many range horses. Sheep now constitute more than half the livestock industry. Ranch owners have changed, but the men who remember "Three Toes" over the whole of his career consider his taking one of the most important feats ever accomplished in the annals of wolf hunting.

The Upper East Tennessee Veterinary Medical Society met at Morristown, September 12th, the principal feature of the session being a lecture by Dr. Paul W. Allen on the subject of milk. He stated the University of Tennessee was willing to maintain at cost a milk testing service department for all smaller towns in the state.

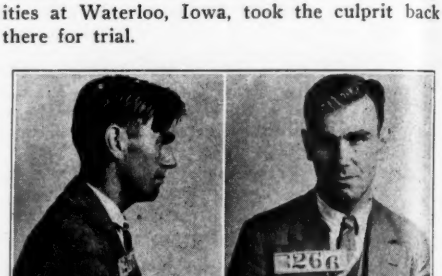
Dr. J. G. Porter of Lubbock, Texas, was called to Houston by government officials, September 12th, to assist in the suppression of the foot-and-mouth disease outbreak.

A hay inspectors' school for army veterinarians was held at the veterinary hospital, Fort Sam Houston, during September. All who made the grades were given certificates licensing them as federal hay inspectors.

Dr. L. J. Kepp has opened a small animal hospital at Hicksville, Tenn. He is a graduate of the Chicago Veterinary College and for three years was engaged in small animal practice at Dallas, Texas.

SWINDLER GETS SEVEN YEARS

The man who had been operating throughout the country for two years, defrauding veterinarians and stock breeders with bogus checks, has finally been put behind the bars. As reported in the October issue, Dr. C. W. Springer of Uniontown, Pa., who saw the notice in the September issue of Veterinary Medicine regarding this swindler's activities, had the man arrested when he called on him, and the authorities at Waterloo, Iowa, took the culprit back there for trial.



Leroy Austin, alias H. C. Helms, alias L. C. Lingle, alias B. L. Baxton, alias Dr. Cox, etc.

E. A. Leighton, Chief of Police of Waterloo, Iowa, writes under date of October 5th as follows:

"I take pleasure in informing you that the swindler known as H. C. Helms, alias L. C. Lingle, alias B. L. Baxton, etc., and whose true name is Leroy A. Austin with home at Marshville, N. C., who has been causing the cattle breeders and veterinarians considerable trouble during the past two years with forged checks, was apprehended at Uniontown, Pennsylvania, September 9th, returned to this city, and is now serving a seven-year stretch in the Iowa State Penitentiary.

"Our file of inquiries concerning the whereabouts of this clever gentleman, received from his victims, has become extremely voluminous. Therefore, I suggest that you publish another item in Veterinary Medicine for the purpose of letting his victims know that he has been apprehended and so that they may be prepared to receive him when his time expires or he is paroled.

"I am enclosing a photograph of the subject in question, which you may reproduce if you wish, as I believe there are quite a number of the boys whom he has visited that would like to have a look at him.

"I wish to sincerely thank you for the cooperation you have extended in this matter."

R. C. Winbigler of Shelby, Ohio, was arrested on a charge of practicing veterinary medicine without a license and fined $50, September 16th.

Dr. Wm. Veit is City Veterinarian of Los Angeles, Cal., and under his administration the city milk supply established a new high rating of 96.1 as a result of a milk scoring contest held early this year. Approximately 100 000 gallons of milk are used daily in Los Angeles. Of this 86 per cent is pasteurized, 7½ per cent is grade A raw milk, 4 per cent is certified, and 2½ per cent guaranteed. The greater part of this milk is produced within a radius of 30 miles from the city.

Dr. D. A. Yandell is now connected with the American Society for the Prevention of Cruelty to Animals at New York City.

Dr. W. H. Hanneman is now located at Salina, Kansas. He was formerly at Hunter, Kan.

Dr. O. E. Dyson has changed his location from Kansas City, Mo., to Wichita, Kan., where his address is 45 Live Stock Exchange.

Dr. R. C. Dickson has moved from Fayette to Corder, Mo.

Dr. W. L. Endsley, formerly at San Antonio, is now located at Houston, Texas.

Dr. Z. C. Shum returned to his home at Biggsville, Ill., September 21st, after a sixty-day vacation spent in visiting Yellowstone Park, the National Wind Cave Park, the Black Hills and Bad Lands of South Dakota, also trout fishing in Minnesota and visiting his farm in southwestern Iowa.

Dr. W. R. Morgan has moved from Jeffersontown to Lebanon, Ky.

Dr. J. F. Beardsley has changed his location from Dale, Ind., to Zephyrhills, Fla.

Dr. C. R. Roberts, formerly at Morrisville, N. Y., is now located at Norwich, N. Y.

Dr. W. H. Rockey has moved from El Monte to Ontario, Cal.

Dr. K. U. Jones has opened a modern veterinary hospital at Birmingham, Ala. For seven years Dr. Jones was head of the veterinary division of the A. & M. College of Mississippi and also consulting veterinarian of the state experiment station.

UCCos Cresolis

Approved Disinfectant

B. A. I. Order No. 273

50 gal. drums	$1.40 per gal.
30 gal. drums	1.45 per gal.
10 gal. cans	1.75 per gal.
5 gal. cans	1.85 per gal.
1 gal. cans	2.10 per gal.

Ask us to quote on the following:

Swine Vermifuge
Liquor Cresolis Compositus, U. S. P.
Circle A Dip
Puro Pine Disinfectant
Iodine 3½% "Approved"
Iodine, Tincture, U. S. P.
Oil of Chenopodium
Antiseptic Olive Liquid Soap
Fly Relief, liquid

Use Disinfectants
Prevent a recurrence of last year's poultry epidemic!

United Chemical Companies
KANSAS CITY, MISSOURI

Dr. S. S. Worley has accepted a position on the staff of the Western Washington Experiment Station as assistant veterinarian and will have charge of the investigation of poultry diseases. He was formerly with the U. S. B. A. I. He is a graduate of the Washington State College.

The name "Department of Veterinary Science" of the Virginia Polytechnic Institute, Blacksburg, Va., has been changed to "Department of Zoology and Animal Pathology," the subject of zoology having been added recently. Dr. I. D. Wilson is at the head of the department and has associated with him Dr. C. J. Coon (Kansas '24) of St. Augustine, Fla., and Dr. H. Van Roekel (Iowa '25).

The Kansas Veterinary Medical Association will hold its annual meeting at Topeka, January 6 and 7, 1926. Dr I J. Pierson, Lawrence, Kan., is president, and Dr. Chas. W. Bower of Topeka, secretary-treasurer.

Dr. F. A. Boies has moved from Pisgah to Logan, Iowa.

MISSOURI VALLEY MEETING

The Missouri Valley Veterinary Association convention, held at the Elks Club in Omaha, Neb., July 13-15, was considered by all those who attended, a fine meeting, full of old time enthusiasm in the interesting discussions presented before the association. That there is a place for the M. V. V. A. in bringing together the veterinarians of this territory to discuss their mutual problems, there was no doubt left in the minds of those who took in this meeting. Due to internal troubles a few years ago, the question of disbanding came up and that feeling got pretty well disseminated through the membership which at one time numbered over seven hundred, making it next in size to the American association. With the large private schools which turned out several hundred graduates a year now closed, the opportunities to increase the membership to its former position cannot be expected; yet within easy traveling distance of the meeting places of the Missouri Valley association approximately one thousand veterinarians are located. Among the active workers in the association are the men who do things in their respective state associations who reside in this territory of Western Iowa, Eastern Nebraska, Northern Missouri and Eastern Kansas, although many are members and regular attendants who live in other parts of these states and in adjoining states.

Until a few years ago, there was some criticism that the Missouri Valley detracted from the state associations and from the American association, by holding competitive programs about the same time of year with some veterinarians feeling that they could not attend both meetings. This criticism has been met by changing the constitution and by-laws so that there is now only one meeting a year, which is held in the summer. All the state associations in this territory but Missouri hold their meetings in the winter time and in the case of the A. V. M. A. meeting in this territory, the Missouri Valley does not hold a summer meeting but holds a winter meeting, according to the change in the by-laws. One of the requirements of membership is that the applicant belong to the state association in the state in which he resides. So far as the Missouri Valley hurting the A. V. M. A. now, it is negligible, for very few general practitioners attend the A. V. M. A. meetings regularly except when the association meets in their territory. The Missouri Valley affords the veterinarians of this region an opportunity to get together, renew old friendships, discuss their problems as met in the various states and to confer on the handling of diseases common to the Missouri Valley. This privilege of renewing old acquaintances is especially appreciated by graduates of the extinct private schools who, except for the A. V. M. A. meetings at intervals of several years apart, have little chance to meet, which the alumni of the state colleges can do each year. With this year's meeting highly successful, many old members renewed their membership and thus put the association in good financial shape with a membership of approximately three hundred.

The first morning, the address of President G. P. Statter started the program with his solicitation for closer cooperation among practitioners and other veterinary forces, renewed interest in the association and for assistance in making the meetings what we all want them to be, worth our time and expense to attend them. Two papers on the handling of minerals by veterinarians were then presented,—one by Dr. B. W. Conrad of Sabetha, Kansas, and the other by Dr. F. O. Lundberg of Wausa, Nebraska. They brought out a lively discussion of both sides of this activity which is attracting the attention of the profession at this time. The general opinion prevailed that to enter this field with purely commercial aims should not be encouraged, for it would bring the profession to the level of the peddlers; but the prescribing of minerals to correct deficiency diseases was considered a legitimate field of the veterinarian. Next followed a very good presentation of the subject of "The Status of the Spayed Heifer" by Dr. W. H. Bailey of St. Joseph. A report was made in the discussion that followed that in an experiment at the University of Nebraska the spayed heifers had not done better than the open heifers, but this view was not agreed with by the practitioners from their observations under usual farm or range conditions. The spaying of the milk cow to enhance the quality of milk and to lengthen the lactation period to several years was brought out as well as the spaying of cows having milk fever regularly.

In the afternoon, the Secretary read a very good paper by Dr. A. Eichhorn on "New Phases in the Control of Anthrax Through Vaccination." Then Dr. W. S. Gochenour of the B. A. I., Washington, D. C., addressed the association on the subject of "Hemorrhagic Septicemia" and answered numerous questions on this topic which is so vital in this greatest feeding section of the United States. His discussion was highly appreciated. The motion picture "Suppressing Foot-and-Mouth Disease," from the U. S. Department of Agriculture, was then

shown and after it some views which were personally prepared by Dr. G. E. Golden of Sioux City, Ia. In the evening, the veterinarians went in a body to the Aksarben, a feature which is nationally known for the good times afforded at this comedy put on by the Commercial Club of Omaha for visitors.

The second morning the program started with a thorough discussion by representatives from the various states of the Missouri Valley upon the tuberculosis eradication movements and how the plans were being worked out. In all the states, in which the county area work is going on, practitioners are being used. Nebraska had used 38 practitioners and Iowa had used 202 in the 46 counties working under this plan and they work on the per diem basis. In Kansas the practitioners test on the per head basis at the same rate at which the work is done by full time government veterinarians. Dr. C. H. Hayes, State Veterinarian of Nebraska, next discussed the subject of "Live Stock Sanitation" in a broad sense and presented some matters which he wished to convey to the practitioners about state work in a very forceful and clear manner. "Experiences with European Fowl Pest" was the topic of a discourse by Dr. E. L. Stubbs of the Pennsylvania Bureau of Animal Industry, who described the outbreaks he encountered and presented a very vivid picture of the condition as he saw it.

In the afternoon, the election of officers was held first, with the following results: president. Dr. B. W. Conrad, Sabetha, Kansas; vice-president, Dr. R. C. Foulk, Holton, Kansas; secretary-treasurer, Dr. E. R. Steel, Grundy Center, Iowa; members of the executive board, Dr. C. E. Baxter for Iowa, I. W. McEakran for Nebraska, J. W. Chenoweth for Missouri, T. W. Gidley, member at large, and Dr. A. F. Wempe for Kansas.

Next, Dr. J. N. Frost, Professor of Surgery at Cornell University Veterinary College, conducted a question box on dairy cattle practice. This brought out many points of interest and proved highly instructive. Among the questions asked was the use of formalin in mastitis, bacterins in streptococcic mastitis, antiseptic oils in cows' uteri when hard to remove placenta, treatment of sterility, use of gland extracts, etc. Dr. Frost advises that if formalin is used, it should be given well diluted and when the cow has drunk water, and he uses it in ounce doses once or more times a day. He also recommended turpentine in ounce doses well diluted for its elimination through the udder. He

Acriflavine and Proflavine
ABBOTT

For mastitis and infections of the genital organs, wounds and systemic infections, the Flavines give excellent results. They can be used locally, orally and intravenously.

Make Your Own Solutions

Acriflavine (powder form) is supplied in 1-Gram, 5-Gram and 25-Gram packages.

1 gram makes approximately 1 quart of 1:1000 solution.

Acriflavine tablets (0.46 grains) are supplied in tubes of 20 and bottles of 100.

One of the above tablets makes 1 ounce of 1:1000 solution.

Proflavine (powder form) is supplied in 1-Gram, 5-Gram and 25-Gram packages.

Literature on Request

Neutral Acriflavine Jelly 1-1000 1 oz. tube

Proflavine Ointment is supplied in ½-oz. jars

The Abbott Laboratories

Home Office and Laboratories

4753 Ravenswood Ave. CHICAGO, ILL.

New York Seattle San Francisco Los Angeles Toronto Bombay

reported that in some cases he had found streptococcic bacterin of value in preventing the spread through the herd. Antiseptic mineral oil injected into the uterus daily in cows difficult to clean was recommended. The practitioners had an opportunity to bring out all the problems of dairy cattle practice and the question box proved to be exceedingly interesting.

"Some Problems of the Profession" was the topic of Dr. L. A. Merillat, who discussed the problems of the profession as he had met them as president of the American Veterinary Medical Association. This was followed by a splendid paper on "Publicity for the Veterinary Profession" by Dr. R. R. Dykstra, Dean of the Kansas State Veterinary College, which was discussed by Dr. C. J. Norden, President of the Nebraska State Association, and by Dr. C. J. Scott, President of the Iowa State Association, who presented their plans for publicity of the profession in their states.

A banquet was held at night with 120 veterinarians and their friends and families present. Some community singing, led by Dr. J. I. Gibson, was done and some solos sung. After that, a speech by Dr. Dykstra on "Veterinary Education and the Live Stock Industry" and other after dinner speeches were made and then Dr. E. A. Cahill gave an illustrated address on "Veterinary Conditions in South America" which was certainly entertaining and instructive. A dance followed. Although the evening was hot, the occasion was thoroughly enjoyed.

The third day of the meeting, the clinic was held at the Stock Yards with 250 in attendance. First, Dr. H. B. Treman demonstrated his methods of restraint for operating on horses in the standing position. Then Dr. J. W. Chenoweth spayed a heifer. Dr. E. L. Stubbs demonstrated a post mortem of a fowl, pointing out the location of lesions to be looked for in diagnosing various conditions including fowl pest. Finally, Dr. Frost demonstrated conditions met with in handling sterility in cattle by means of specimens which were collected from the packing houses. He also performed various operations on the udder, using some udders presented for the occasion from the killing floor, and showed how he does the operation for end to end anastomosis of the intestine in cases of intussusception with almost 100 per cent recoveries. He stated in discussing the operation on the cow's tongue to prevent sucking that he uses hog rings inserted in the tongue for this.

With a motion of thanks to those who had helped with the program, the meeting adjourned.

E. R. Steel, Sec.

EASTERN IOWA MEETING

The twelfth annual meeting of the Eastern Iowa Veterinary Association was held at Cedar Rapids, Iowa, October 7th and 8th.

The question box handled in an able manner by Dr. A. T. Kinsley of Kansas City, proved a big feature of two sessions, and such interest was shown that all questions submitted were by no means taken up owing to lack of time. The papers of the two sessions proved an attraction to most of those in attendance, and it was remarked that during the meetings no veterinarians were to be found outside the hall. The clinics were ably conducted, and a large crowd showed much interest in the various operations and exhibits.

An innovation of the banquet program on October 7th was a burlesque staged by Mr. A. O. Ambroz of Cedar Rapids, entitled, "Why I Obtained a Permit to Vaccinate My Own Hogs." Mr. Ambroz, dressed as a typical hayseed, described the two-day school and his experiences after "graduation" and had the large crowd of veterinarians and their ladies in an uproar of laughter throughout. Dr. E. M. Nighbert of the B. A. I., Queen City, Mo., also gave his famous rendition of a southern coon hunt which brought down the house. The Scotch songs of Mrs. A. R. Menary closed a very enjoyable program. Dr. Kinsley was a very efficient toastmaster.

The publicity committee had a large display of clippings taken from the newspapers during the past year, which came in for a good deal of attention and comment. The committee was also very active with the local newspaper reporters, and the press was well filled with information regarding the meeting.

The following officers were elected: Dr. J. C. Glenn, Norway, Ia., president; Dr. J. H. Schrader, Oxford, Ia., vice president; Dr. John B. Bryant, Mt. Vernon, Ia., secretary-treasurer; Dr. J. C. McCabe, West Liberty, Dr. J. S. Potter, Iowa City, and Dr. Frank M. Wilson, Mechanicsville, members of the executive board.

Grant B. Munger

Cedar Rapids, Ia.

Dr. W. A. Moeller has changed his location from Pocahontas to Waterloo, Iowa.

Dr. G. M. La Fontaine of St. Thomas, Virgin Islands, was confined to the hospital the early part of September due to injuries sustained as a result of falling from a horse.

Wet dressings and Compresses for Operative Wounds

Digital and Plantar Neurectomies

Quittors, Resections of the Flexor Pedis Tendon

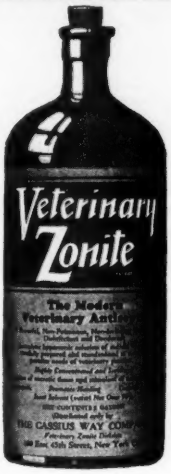
Wet dressings applied to Subcutaneous Infections

Parasitic and other Skin Infections

Oral and Head Operations

Treatment and Control of Breeding Diseases

Medication of Drinking Water for Poultry



Veterinary Zonite

A powerful, stable, non-poisonous Antiseptic

Always ready for instant use

THIS new antiseptic is prepared exclusively for the Veterinary Profession, and its valuable properties have caused an increasing appreciation among leading practitioners in this diversified field.

Veterinary Zonite is a specially improved and concentrated form of sodium hypochlorite in an electrolytic hypertonic solution. As a general cleansing agent and deodorant, as an antiseptic for all external parts, for aseptic dressings to control infection, for irrigations in wound infection, we freely recommend its use.

Sold only to the Veterinary Profession in one-gallon glass containers, rubber-stoppered. Net price, $4.00 delivered to you, cash with order or C. O. D. *We pay transportation charges.* Professional veterinary booklet sent on request.

All orders or communications should be addressed to

THE CASSIUS WAY COMPANY

Veterinary Zonite Division

100 EAST 45th STREET NEW YORK, N. Y.

Dr. Robert A. Ball of Modesto, Cal., recently announced in the local press the completion of his Stanislaus Veterinary Service Sanitarium, representing an expenditure of approximately $20.000. The structure is of a bungalow type, harmonizing with an eight-room house located on the same property. Electric heat is used throughout, and all the modern equipment for taking care of small animals has been installed. Dr. Ball has been in practice at Modesto for the past six years.

Dr. O. L. DeVore of Bozeman, Mont., in partnership with another man, recently opened an auction stable for the sale of horses and mules in that city. Dr. DeVore is a graduate from the McKillip Veterinary College and came to Montana sixteen years ago, since which time he has built up an excellent practice in Gallatin county. In addition to the auction business, the doctor will conduct a small animal practice, having installed equipment to take care of this work at the barns.

COLORADO MEETING

About fifty Colorado veterinarians attended the semi-annual meeting of the state association at Pueblo, August 11th and 12th, according to the report of Dr. A. G. Fisk, Greeley, Colo., Secretary. He states that keen interest in every number on the program as well as in the business session and discussion of business conditions as related to veterinary practice, marked this meeting.

The president's address was delivered by Dr. W. G. Blake of Greeley, followed by an address by Dr. J. V. Knapp, State Veterinarian of Florida. Differential diagnosis of diseases of swine was discussed by Dr. W. H. Bray of Fowler, and Dr. A. G. Wadleigh of Monte Vista; diagnosis and treatment of intestinal diseases of horses, by Dr. N. J. Miller of Eaton; Thoroughbreds and racing, by Dr. M. J. Dunleavy of Denver; the Standard Bred and his future, by Dr. Geo. W. Dickey of Colorado Springs; advertising, by Dr. L. L. Glynn of Monte Vista; municipal meat inspection by Dr. B. F. Gooch of Pueblo; modern dairy inspection, by W. L. Scott of Denver; milk inspection, by Dr. A. N. Carroll of Pueblo; bovine diseases, by Dr. M. E. Spratlin of Littleton; the corpus luteum, by Dr. Cecil Elder of the University of Wyoming; sterility, by Dr. H. E. Kingman of the State College; poultry practice, by Dr. F. F. Mendelhal of Lamar; canine practice, by Dr. C. C. Stewart of Colorado Springs and Dr. H. E. Kingman; white diarrhea of chicks, by Dr. Floyd Cross of the State College; and the intradermal test for white diarrhea, by Dr. Geo. W. Stiles, Jr., of the U. S. B. A. I., Denver.

ARKANSAS STOCK OWNERS HOODWINKED BY "ANTHRAX CURE"

Dr. J. H. Bux, State Veterinarian of Arkansas and head of the department of veterinary science, College of Agriculture, University of Arkansas, is quoted in the local press as giving the following history of an alleged cure for anthrax recently exploited in that state:

"During 1924, W. S. Fairbanks and son of Louisiana arrived in Arkansas County. They solicited animals for treatment by some secret method for cure and the prevention of anthrax. A number of herds were secured. Apparently good results were attained in some instances. This was due to the treatment of herds affected with mild anthrax or not infected.

"In the summer of 1925 they returned to Arkansas. A number of animals were treated with guarantee; charging from three to ten dollars a head. The method of cure or treatment was prominently advertised in one of the Stutgart papers. The latter is being investigated by federal authorities.

"Upon recommendation of this office, the Messrs. Fairbanks were fined $5.00 each and costs in a Prairie County J. P. Court. A large delegation of good citizens appeared in court in their defense, innocently and conscientiously believing that the method or treatment was reliable, and that they were being persecuted.

"Mr. Fairbanks requested that he be given an opportunity to demonstrate the efficiency of his method under the supervision of this department. This was granted. However, Mr. Fairbanks up to this day has not taken advantage of the proffered trial.

"On July 25 anthrax appeared in a very virulent form in some of the herds treated by the Messrs. Fairbanks. Suffice it to say, the method or treatment was very highly unsatisfactory, the losses ranging as high as seventy-five per cent of the animals treated. Immediately stock owners demanded a refund of the cost of treatment. Needless to say, none was received.

"In August, the case was called in circuit court, DeValls Bluff. Neither defendant appeared nor a delegation in their defense. The decision of the lower court was sustained. The position and the feeling of the hard working citizens who signed the Messrs. Fairbanks' bond is readily apparent."

U. S. Gov't Seal furnished by the Government and applied under Federal Supervision

Government Legend

The same as

"Bottled in Bond"

ALL SIHLER DEPENDABLE PRODUCTS, produced under Gov't. License No. 24.

Bear U. S. Gov't. non-replaceable seals. Applied under federal supervision.

The THINKING VETERINARIAN knows he must use a dependable serum if he is to warrant the confidence of his clients and maintain his good reputation in the locality where he builds his practice.

Insist upon the U. S. Gov't seal for your PROTECTION!

SIHLER SERUM COMPANY 210 Central Avenue Kansas City, Kansas

Missouri's first accredited or modified area tuberculosis-free county was established during August as Monroe, approved on joint authority of the U. S. B. A. I. and State Veterinarian H. A. Wilson. There are 96 counties in the United States approved as "modified accredited tuberculosis-free areas," as follows: California, 2; Florida, 3; Idaho, 2; Illinois, 1; Indiana, 6; Iowa, 9; Kansas, 5; Michigan, 10; Minnesota, 3; Missouri, 1; Nebraska, 3; New York, 1; North Carolina, 37; North Dakota, 5; Oregon, 1; Pennsylvania, 3; Tennessee, 3; Utah, 1.

Dr. L. B. Hall of Waynesville, Ohio, recently purchased a drug store in that city.

Dr. and Mrs. E. C. McCulloch of Medford, Ore., left that city on September 23rd for Tampico, Mexico, where the doctor has accepted a position with the Tampico Land and Development Co. While enroute they will visit at Tulare, Cal., and Olivet, Kan. Dr. W. D. Stone, formerly of Harvard, Neb., has purchased Dr. McCulloch's hospital at Medford and taken charge of the practice.

Dr. Guy P. Hatchett has resigned as assistant state veterinarian of Tennessee and associated himself with Dr. F. W. Morgan in Chattanooga. Dr. Hatchett has been assistant to Dr. W. B. Lincoln, state veterinarian, for the past three years.

Dr. C. E. Sawyer, of the division of veterinary medicine, Kansas State Agricultural College, Manhattan, connected with the college since 1921, has resigned to accept a position as poultry research veterinarian at the Western Washington Experiment Station, Puyallup, Wash.

Dr. H. J. Frederick, professor of veterinary science at the Utah Agricultural College, returned for the opening of the school, September 28th, after spending six months in special study in Europe.

Dr. and Mrs. A. F. Burger, Alta, Iowa, are the parents of a baby boy, born September 22nd, weight 8½ pounds, named August F. Burger.

For some time the Biological Survey of the United States Department of Agriculture has been making preparations for an experiment in connection with the improvement of the reindeer stock in Alaska by means of crossbreeding

with caribou. After considerable difficulty in obtaining wild caribou a shipment of ten young bulls was successfully transported to Nunivak Island during the past summer. They were delivered at Kokrines for transporting down the Yukon River.

Dr. Francis L. Vail is now located at Oberlin, Ohio.

Dr. S. S. Snyder has changed his address from Pottsville, Pa., to Vineland, N. J., near which city he has bought a farm. He has been connected with the Bureau of Animal Industry for the past seventeen and one-half years.

Dr. W. T. Johnson, formerly at the Western Washington Experiment Station, Puyallup, Wash., is now associated with the veterinary department of the Oregon Agricultural College at Corvallis, Ore.

Dr. N. D. Cash recently associated himself in practice with Dr. Fred C. Wright at Santa Ana, Cal.

Dr. C. E. Ranney, who has been on the B. A. I. field force of Dr. J. A. Barger at Dewitt, Iowa, has been transferred to the Denver field force with headquarters at Denver.

Dr. F. E. Boyd has changed his location from Westport to Plattsburgh, N. Y.

Dr. Robert W. Culbert, B. A. I. inspector in charge at St. Joseph, Mo., has been promoted to traveling supervising inspector. Dr. D. J. Stockler of Wheeling, W. Va., took over the post at St. Joseph, August 24th. Dr. Culbert had been stationed there four and one-half months, having succeeded Dr. D. R. Gillies, who was advanced last March to a similar position at New York.

G. H. Hecke, director of the California State Department of Agriculture, recently announced the issuance of a warrant for $2,239,106 to pay the claims against the state for animals and property destroyed in the foot-and-mouth disease eradication campaign. Of this amount the largest check to be issued was for $512,500 to the California Bankers Association for cash advanced to pay the more urgent claims of stockmen. This completes the payment by the state covering all losses in the recent outbreak of the disease.

THE VETERINARY RECORD

The Official Organ of British Veterinary Opinion

Keep abreast of current scientific and clinical veterinary activity in the British Isles by Subscribing to THE PAPER OWNED BY THE BRITISH VETERINARY PROFESSION.

It is

THE WEEKLY YOU WANT

Published by the National Veterinary Medical Association of Great Britain and Ireland, 10, Gray's Inn Square, London, W. C. 1.

Subscription $12.60 post free weekly.

The finest medium for advertisement.

CLASSIFIED ADVERTISEMENTS

For Sale, Wanted, etc., $2.00 for 25 words or less; additional words, 8 cents. 25 cents extra when replies are sent care of the journal.

FOR SALE—WANTED

"QUICK COLLECTIONS"—Everywhere. Live wire firm! Established 32 years. William H. Dodd, 87 Nassau St., New York. Don't wait, send us your bills today!

BETTER PRINTING for less money. Send for free samples of letterheads, envelopes, circulars, booklets, cards, etc. They will save you money. Fantus Co., 525 So. Dearborn St., Chicago.

VETERINARY PRACTICES, POSITIONS ETC., furnished and handled for sale in 48 states. Physicians, dentists and nurses furnished and located. Drug stores for sale and drug positions in all states. F. V. Kniest, Peters Trust Bldg., Omaha, Neb. Established 1904.

SALESMAN WANTED to distribute biologics, veterinary supplies, physician's supplies, including surgical instruments and dressings, in Middle West and Eastern States. Address 836, care Veterinary Medicine, 4753 South Park Way, Chicago, Ill.

FOR RENT—Office and reception room with heat and hot water over drugstore. Excellent opportunity for dog and cat practice. Address Edward Stuchlik, 6243 W. 22nd St., Berwyn, Ill.

WANTED—Back numbers of Veterinary Medicine for March 1925. Subscriptions extended one month for each copy received. Address Veterinary Medicine, 4753 South Parkway, Chicago, Ill.

POSITION WANTED—By licensed graduate veterinarian with general practice experience and four years in tuberculosis eradication work. Position as assistant in small animal practice preferred. Address 839, care Veterinary Medicine, 4753 South Parkway, Chicago, Ill.

FOR SALE—Veterinary library, 19 volumes, consisting of the following: Special Pathology and Therapeutics, Hutyra and Marek, 2 volumes; Textbook of Pathology, Delafield and Prudden; Infectious Diseases, V. A. Moore; Meat Hygiene, Edelmann; Regional Veterinary Surgery, Moller and Doller; Veterinary Pathology, Friedberger and Frohner, 2 volumes; Foods and Their Adulteration, Wiley; Medical Chemistry and Toxicology, Holland; Veterinary Materia Medica and Therapeutics, Winslow; Veterinary Bacteriology, Buchanan; Swine Husbandry, Coburn; Swine Diseases, Kinsley; Colics and Their Treatment, Campbell; Rabbit and Cat Diseases, Saunders; Springtime Surgery, Campbell; Horseshoeing, Adams; Medical Dictionary, Dorland. All of these books are in good condition. Price for the entire lot, $20.00 net. Address Veterinary Medicine, 4753 South Parkway, Chicago, Ill.

"Making Animal Tagging Easy"

KETCHUM CLINCHER

The new self-piercing and self-clinching bright STEEL tag for Cattle, Sheep and Hogs—that stays in. Three sizes. Numbered and Lettered to suit. Write for descriptions and prices.

KETCHUM MFG. CO., Dept. A, Luzerne, N. Y.

BLOOD PRESSURE APPARATUS FOR DOGS

Essential to successful canine practice.
Indispensable for physical examinations.
Necessary to interpretation of the main functional symptom of diseases in dogs.

Complete Mercury Instrument with 2 sleeves $49.50
Complete Aneroid Instrument with 2 sleeves 35.50
Sleeves only (large or small)..... 8.00

J. G. HORNING
P. O. Box 1395 HOUSTON, TEXAS

MILLERS A-I BISCUITS
Treat your pet to a welcome change of diet. Ask your dealer for Miller's. If he cannot supply you, send 10 cents for trial package of each of our products. Mention dealer's name.
BATTLE CREEK DOG FOOD CO.
"Battle Creek Health Food for Dogs"

Coopers Saponified Cresol Solution

COOPER GUARANTEED PRODUCT

(50% Cresol)

The dependable disinfectant for cleaning up after your tuberculin tests.

Officially approved substitute for Liquor Cresolis Compositus in disinfection work under B. A. I. or State Control.

Always of uniform strength.

Always priced right.

William Cooper & Nephews, Inc.
152 West Huron St.
CHICAGO

Dr. C. H. Newton recently located for practice at Anadarko, Oklahoma. He was formerly at England, Ark. He is a graduate of the Ontario Veterinary College and has been in practice since 1905.

Dr. C. W. Wharton, a recent graduate of the veterinary course at the Colorado Agricultural College, has located at Grants Pass, Ore., where he has been appointed city and county dairy and meat inspector.

Dr. B. P. Johnson, federal veterinarian, formerly located in northern New Mexico, has been assigned to Arizona by the U. S. B. A. I. to assume charge of the eradication of bovine tuberculosis. He will succeed Dr. M. Shipley, who formerly had charge of the campaign in the state.

Dr. J. H. Guion has moved from New Augusta to Indianapolis, Ind.

Dr. O. H. West of LaBelle, Mo., a graduate of the St. Joseph Veterinary College, has located at Kirksville, Mo., and will be deputy state veterinarian for that section.

Dr. R. R. Root, city veterinarian of Richmond, Cal., has been commended by Dr. M. E. McDonald, market milk specialist of the California bureau of dairy control, for his good work in improving the milk supply of that city. In recent tests none of the eleven dairies in that district fell below 90 per cent.

Dr. O. F. Foley of Bridgewater, Va., was appointed by Dr. J. G. Ferneyhough, State Veterinarian, to inspect poultry exhibited at the state fair. Dr. Foley has specialized in poultry and poultry diseases for several years.

Dr. Peter Garside announces a change of address from Bourbon, Ind., to Daytona Beach, Fla.

The annual meeting of the San Joaquin Valley Veterinary Medical Association was held at Fresno, Cal., October 1st. Foot-and-mouth disease control was discussed by Dr. C. M. Hering of the University of California, and milkweed poisoning of cattle and sheep by Dr. W. L. Brown, county livestock inspector. The following officers were elected: Dr. J. R. Hoop of Fresno, president; Dr. R. A. Groshong of Selma, vice president; Dr. Frank O. Brostrom, Fresno, secretary.

A report from the U. S. Bureau of Animal Industry states that since last spring they have been able to confirm a diagnosis of fowl pest only in New York and Delaware. In the former state the disease made its appearance about July 1st in a flock of 900 chickens near East Hampton on Long Island. In the latter, about 200 chickens on a farm near Dover, Delaware, were involved. The usual slaughter and disinfection methods were enployed in combating these outbreaks. Numerous investigations have been made in the central western states, but in all instances the findings have been that the losses, which in a few shipments have been quite heavy, have been due to some of the common ailments, such as roup, or to dietetic disturbances.

A procession of chickens 100,000 miles long, laying enough eggs each year to reach from the earth to the moon and back, is something "Uncle Sam, the poultryman," can boast, according to the United States Department of Agriculture educational motion picture, "Four Hundred Million Chickens!" The film constitutes a "bird's-eye" view in one reel of the poultry industry in the United States, showing commercial, farm, and back-yard chicken plants.

THE HORSE IN NEW YORK CITY

Press reports from New York City indicate that far from succumbing to the increasing pressure of motor-propelled transport, the horse has held his own in that city and even promises to stage a comeback if the traffic congestion becomes more acute. A newspaper item states that during the past five years the number of horses in commercial use in New York has continued around 10,000. However, Wayne Dinsmore of the Horse Association of America, states this figure is erroneous, the total number being 50,053. One firm reported an average of 400 "trades" a day, and spokesmen for special distributing agencies which have held almost exclusively to horse-drawn wagons declared the prospect is rather for an increase than for diminishing that feature of their equipment. The wear and tear of frequent starts and the excessive cost of operation of large trucks held by traffic jams for considerable periods are factors advanced in the horse's favor. But regardless of traffic conditions, he is declared by his champions to be supreme in such industries as retail delivery of milk and ice Gallons of milk and tons of ice must be delivered every morning at the rate of a bottle and

a twenty-pound piece to a stop. The horse proves vastly superior to the motor truck and fills a position all his own, especially for short hauls. One New York trucking firm alone operates 950 horses and reports them indispensable.

NORTHWESTERN INDIANA MEETING

The Northwestern Indiana Veterinary Association held its annual picnic at Christana Lake, Mich., July 8th, in charge of the Elkhart county veterinarians. Members and their wives present enjoyed a sumptuous milk-fed chicken dinner at the tavern. Several after-dinner addresses were delivered by the veterinarians of Michigan and Indiana.

Dr. B. J. Killham, State Veterinarian of Michigan, gave a very interesting talk on minerals and vitamins.

Dr. Ward Giltner, Dean of the Veterinary Department, Michigan State University, discussed abortion in cattle.

Dr. Walker of Purdue University, dealt with the diseases of poultry.

Laporte, Ind., was chosen as the place for the next meeting in November.

F. E. Broad, Sec.-Treas.

Plymouth, Ind.

Dr. James A. Waugh of Pittsburgh, Pa., relays a report from the Toronto Globe that the Ontario Veterinary College opened October 2nd with 20 freshmen, 22 sophomores, 15 juniors and 15 seniors—a total enrollment of 72.

Dr. N. Rectenwald of Pittsburgh, Pa., has retired after sixty years of practice. He is a great grandfather.

Dr. Wm. Brod of The Western Pennsylvania Veterinary Club is planning an interesting course of instruction for members during the coming winter.

Dr. Brainard & Woodruff, 11605 Euclid Ave., Cleveland, Ohio, announce that they will be pleased to send a copy of their book on dogs to anyone sending the cost of postage, 4 cents. The volume is an attractive 128-page book gotten up for distribution to their clients on the occasion of the opening of the firm's new dog hospital and pet shop. It contains illustrations, stories and verses about dogs. Other small animal practitioners can no doubt derive helpful suggestions from this work that may be utilized in advertising their services to clients.

FISTULA OF THE WITHERS AND POLL EVIL SUCCESSFULLY TREATED WITH FISTONE

BY INTERNAL TREATMENT

FISTONE AND APPLIANCE CO.
College Corner, Ohio

Gentlemen:

Received the one-half dozen boxes of Fistone on time. Horse under treatment now a case of poll evil, also a quittor of long standing. With the other dozen boxes I received I cured to my satisfaction and needless to say the owners, four cases of fistulous withers. One case had been standing three years and only took two boxes to cure. Another case for two years and had been operated by a quack and two graduate veterinarians without success, four boxes Fistone cured this case. The other two cases were recent; two boxes cured one and four the other.

My second case was in a four-year-old Percheron mare, and the owner had offered anyone $50.00 to cure the fistula. One quack and two graduates had failed to pick off the money. After four months had passed the owner came into my office and handed me a $50.00 bill besides my fee of $20.00 for the four boxes of Fistone.

I cannot praise Fistone highly enough, and although I was taught while in school that such treatment was empirical, nevertheless, it is the most humane and ethical treatment any one could ask for.

Thanking you for your wonderful treatment, I remain,

Very truly yours,
M. M. MANNING, D. V. M.
Bagley, Iowa

Price ½ Doz., $5.00; 1 Doz., $10.00, Postpaid

To Introduce Fistone

Beyond the sphere wherein its merits are not disputed, we will send you a dozen boxes (12 ounces each) once only on receipt of your professional card or stationery and $8.00.

COUPON

Fistone and Appliance Company,
College Corner, Ohio.

Enclosed find check for $8.00 for which send me One Dozen, 12-ounce boxes of FISTONE, "An Internal Treatment for Fistula of the Withers, Poll-Evil, Quittor and other Chronic Suppurations."

Dr......

Address.....

Send for illustrated literature of Dr. C. A. Clark's Automatic Sanitary Operating Table for Vaccinating Swine.

Dr. T. F. Pfaff of New Glarus, Wis., has sold his practice to Dr. Wright of Westfield, Wis. Dr. Pfaff is retiring from active work in the profession.

Dr. M. R. Sebright has moved from Crofton to Hartington, Neb., where he has taken over the hospital of the late Dr. Strayer. Dr. Sebright is a graduate of the St. Joseph Veterinary College and has practiced at Crofton several years. He spent two years in the army during the world war and is an active worker in the American Legion.

Dr. C. M. Lunn of Malta, Ill., has sent in a notice of the death of Dr O L Tesdal of Rochelle, Ill. Dr. Tesdal died September 26th of uremic poisoning. He was born in Norway and came to America when 18 years old. At the time of his death he was 55 years of age. After arrival in this country he worked on a farm six years, then was a street car motorman in Chicago, following which he studied veterinary medicine. He graduated from the McKillip Veterinary College in 1910, and the Chicago Veterinary College in 1917. After graduation from the McKillip school, he practiced at Wheaton two years, then at Lee, Ill., three years, and the balance of his career at Rochelle. He was an assistant state veterinarian, and a very successful practitioner. He leaves to mourn him a wife and sister and a host of friends.

Dr. Lawrence W. Neely is now located at Rocky Point, Wyoming.

Dr. Floyd E. Hull has moved from Downs, Kan., to Lexington, Ky.

Dr. R. R. Childers has changed his location from Jasper to Beaumont, Texas.

Dr. W. L. Mills, formerly at Perry, N. Y., has moved to Geneseo, N. Y.

Dr. J. O. Williams is now in practice at Smyrna, Del. He was formerly at Seaford, Del.

Dr. J. W. Roberts, of the veterinary firm of Drs. Roberts & Ronsee, Turlock, Cal., has sold his interest in the firm to his partner and, according to local press reports, intends to locate for practice in some other city.

REDUCE
Your Feeding Costs
for
large users
MARO-MEAT

Will reduce the cost of feeding to but a few cents per meal per animal. It is a clear meat-and-marrow product, too highly concentrated for feeding alone. MARO-MEAT is designed for large consumers, as a basic meat ration to be mixed with other and lighter material. You will agree that we have produced in MARO-MEAT a product of the same high degree of quality as is recognized in

KEN-L-RATION and HEMO-RATION
The Dog Foods Supreme

All meat used in this product is inspected and passed by United States Department of Agriculture (Est-E67).

Pound sample will be gladly furnished free upon request.

CHAPPEL BROS., Inc. **ROCKFORD, ILL.**

ANNOUNCEMENT TO VETERINARIANS

We now have a warehouse at Grinnell, Iowa. The Veterinarians in the central west can get goods promptly with a cheap freight rate from this point. Our Divisional Veterinarian, Dr. C. C. Logan, of Mt. Pleasant, Iowa, is at your service. We need you to take care of our business in your locality. Mineral Feed is the ethical side line the Veterinarians are enthusiastic about. Write for our new illustrated circular and proposition.

HOOSIER MINERAL FEED CO.

Write at once

MAKES FEEDING ECONOMICAL AND PROMOTES THRIFT — GREATER ECONOMY — A MINERAL FEED FOR EVERY NEED

Territory being allotted rapidly

GREENWOOD, INDIANA.

E. E. CLORE, D. V. M., President

Dr. H. H. Carter of Memphis, Tenn., who was suffering from anthrax contracted early in September, was reported as convalescent the early part of October.

HAWAII ASSOCIATION MEETING

The second annual meeting of the Hawaii Veterinary Medical Association was held at the rooms of the Board of Commissioners of Agriculture and Forestry, Honolulu, September 7th, and the following program carried out:

Lesions of tuberculosis reactors were demonstrated at a local slaughter house by Drs. T. F. Arnold and L. E. Case. A demonstration of dressed beef grading was given by Col. Wm. A. Sproule and Captain Stanley C. Smock. Those in attendance then met at the government nursery on King Street, and listened to the president's address by Dr. H. B. Elliott, a paper on meat inspection by Dr. T. F. Arnold, and "Notes on field observations made on a disease resembling pestis equinus" by Dr. J. C. Fitzgerald.

An auto trip was made to inspect a new certified dairy, after which the literary program was resumed with the following papers and discussions: "Dairy Sanitation" by Dr. L. C. Moss; "Some Observations on Blackleg and its Control on Maui" by Dr V N Onissimenko; "Tuberculosis Eradication on Oahu" by Dr. L. E Case.

In the evening a banquet was held at which Dr P. H. Browning reported on his trip to the A. V. M. A. convention at Portland, and Col. Wm. A. Sproule discussed the army veterinarian.

Officers elected for the ensuing year were Dr. H. B. Elliot, Hilo, Hawaii, president; Dr. J. C. Fitzgerald, Paia, Maui, vice president; Dr. P. H. Browning, Honolulu, Hawaii, secretary and treasurer.

Visitors present at the banquet who made interesting talks were Mayor John H. Wilson, Honolulu; H. P. Agee, Director of Sugar Planters Experiment Station and member of the Board of Commissioners of Agriculture and Forestry; and F. C. Giltner of the firm of Giltner Bros., of Eminence, Ky., exporters of livestock, who have exported to the territory of Hawaii many thousands of dollars worth of livestock, who came to judge the livestock at the territorial fair, August 31st to September 9th.

It was voted to hold the next annual meeting at Hilo, Hawaii.

P. H. Browning, Sec.-Treas.

Antiphlogistine

Is a Valuable Aid to Veterinarians in

EQUINE BOVINE CANINE
FELINE PRACTICE

MASTITIS
PNEUMONIA
TENDINITIS
SPRAINS
SCRATCHES
ORCHITIS
CAPPED KNEE
INFLATED GLANDS
ABSCESSES
BRUISES
BURNS
BOG SPAVIN
HARNESS GALLS

Yield Promptly to

ANTIPHLOGISTINE

Applied Hot and Thick and Covered With Cotton

Send for Booklet and Sample

The Denver Chemical Mfg. Co.
New York

Dr. James A. McKitterick of Pleasant Hill, Mo., was recently promoted to captain in the Missouri National Guard and now ranks as senior veterinarian in that organization. He is a graduate of the Kansas State school.

At a meeting of the board of supervisors of Will county, Illinois, in September, it was voted to discontinue the employment of a county veterinarian. Appropriation for this position was set at $4,000 a year, and the members of the board stated that the expense was too great. Will county has a large number of tuberculin tested herds.

Dr. W. F. Schwiesow has opened a veterinary hospital at Ripon, Wis., having converted a building formerly used as a blacksmith shop into an infirmary with modern facilities for taking care of both large and small animals.

Dr. W. P. Shoaff, Paris, Ill., Secretary-Treasurer of the National Highway Veterinary Association, reports that a meeting of the organization was held at Toledo, Ill., October 1st, with an excellent program and a good attendance. Interesting talks were given by Dr. Robert Graham of the University of Illinois, Dr. A. T. Peters of Peoria, Ill., Dr. J. S. Koen of Bloomington, Mr. John Vandervort, Poultry Extension Specialist of the University of Illinois, and Mr. Waldo Vickery, Manager of the Wadley Produce Co., of Mattoon, Ill. The next meeting of the association will be held at Marshall, Ill., in January.

Dr. Ed. Everett has moved from Hendersonville, N. C., to Mendenhall, Miss.

The seventeenth annual meeting of the American Association of Instructors and Investigators in Poultry Husbandry, held at Manhattan, Kansas, August 10th to 15th, was attended by one hundred men and six women as delegates from various branches of poultry teaching, research and regulatory institutions. Ten men registered were veterinarians. Action was taken to standardize the terms and regulations governing hatcheries. Important contributions to the program were, the effect of ultra-violet light, direct sunlight, codliver oil and irradiated feed on hens and chicks by Hughes and Moore of Manhattan, parasitic worms of poultry by Dr. Achert of Kansas, and the control of coccidiosis by Sherwood of Texas.